ComputerWeekly

Thursday, March 25, 1982

Industry will fund new comms network

by Donald Kennett

THE government is assured that private finance will be readily available to build the nation's proposed new wideband cable network.

The network, which was instigated by the government's Information Advisory Panel, would support advanced domestic computer services as well as many new television channels.

In its report, published this week, the panel states that cable systems offer large business opportunities with good chances of profit. And that during investigations firms showed considerable interest in participating.

More sources could be tapped than was the case in direct satellite broadcast systems, said the panel, because the scale of investment for distinct parts of a cable system would be much smaller.

The panel has recommended that the target date for systems to be working should be in time for the direct broadcast satellite services at the beginning of 1986 and UK industry must be allowed as much preparation time as possible.

The cable scheme is envisaged as discrete broadband local area networks installed under franchise arrangements in urban areas and designed to a common set of standards. Interactive information services including education, security monitoring, local publishing and advertising are seen as important applications for the future, but initial financing will depend on revenue from additional entertainment channels, and interdependence with direct broadcast satellite services.

The Home Secretary has appointed Lord Hunt of Tanworth, a director of IBM, to lead a team of three in investigating broadcasting standards and controls by September.

The Prime Minister said last week that arrangements are being made now "for a detailed and urgent examination of telecommunications and broadcasting policy issues in consultation with the interests concerned".

The panel has proposed that the government announce a broad policy by the middle of this year, with detailed administrative and regulatory proposals following early next year.

Brains behind the network . . . the government's Information Technology Advisory Panel. (From left) Ivor Cohen (Mullard), Tony Davies (ITL), Margaret Thatcher, David Hartley (Cambridge University Computing Services), Charles Read (Inter-Bank Research Organisation) and Charles Southgate (BOC).

SINCLAIR . . . Raising money for capital investment.

Clive Sinclair cashes in 10% of his chips

by David Craver

CLIVE Sinclair, one of Britain's best-known microcomputer pioneers, is cashing in a share of his company to raise money for capital investment.

The merchant bank Rothschild will handle a private share placing some time this summer and is currently undertaking a valuation of Sinclair Research to determine a price.

Clive Sinclair, founder and owner of the company, says he will sell about 10 per cent, depending upon the valuation. Sinclair Research's year-end is at the end of this month, and profits will be over £6 million.

Sinclair says current business is very strong, but he does not want to divert funds from the computer business to provide the necessary capital investment in projects such as his electric car. The car, which will be launched in 1984, will need substantial start-up money for production facilities.

Sinclair says he has made no decision concerning an eventual move to a full Stock Market quotation. The private placing of shares will probably take place in July.

Sinclair Research, which was set up just two and half years ago, has sales running an estimated £30 million a year. Its ZX81 is being produced at a rate of 60,000 a month, and a deal has recently been signed to sell the personal computer in the US through Timex, the US watch and camera company.

ULCC buys a Cray

by Philip Hunter

UNIVERSITIES and teaching hospitals in the UK will have access to both Cray and Control Data supercomputers following purchase of a Cray 1S by the University of London Computer Centre.

Manchester University Computer Centre, which runs a public operation, had already opted for the rival supercomputer made by Control Data.

The Cray 1S 1000 that ULCC is buying has been on lease to the Science and Engineering Research Council since April 1981. ULCC has taken up a purchase option. SERC's existing leasing commitment and ULCC will make the system available both to its own users and the university community and the SERC.

ULCC is replacing existing Control Data mainframes, but the decision was based on expanding the potential service to users rather than any dissatisfaction with the CDC machines. John Clegg, assistant director of the Manchester University Centre, said the discussions of the two were complementary, and in the end it was down to deciding which university would buy which machine.

ULCC had a long wait for a supercomputer, having cleared the way last spring with the purchase of an Amdahl V8 IBM compatible mainframe to serve as a front end support processor.

ICL signs Logica WP

FORMAL agreement has been reached between ICL, the National Enterprise Board and Logica for ICL to market the Logica N2200 word processor. The deal fills an important gap in ICL's product range and could lead to a doubling of sales from last year's "over 1,000", according to Pat Coen, managing director of Logica VTS, which makes it.

The N2200 began as a product developed for sale by Nexos, the NEB-owned office automation company which has been wound up with big losses. It was at the heart of the proposed takeover of Nexos by Gestetner, which fell through after it became apparent that Logica VTS would not also be transferred to Gestetner as the NEB had led chairman Jonathan Gestetner to believe.

ICL then stepped in to buy up existing stocks of the N2200 and negotiate with Logica. The 2200 will be supplied to it under an OEM deal with an undisclosed minimum amount over two years, says Coen. He is optimistic that sales will now surge ahead.

"Logica can't get a mass market as ICL can," he commented.

The N2200 is based on the Intel 8086 processor and is generally reckoned to be a worthy if unexciting product, having a good screen layout and straightforward operating procedure.

It will be sold by ICL as a standalone word processor and for networking.

Printed in Great Britain by QB Limited, Sheepen Place, Colchester CO3 3LJ, and published by IPC Electrical-Electronic Press Ltd., Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS.

Computer Weekly

Thursday, April 1, 1982 Number 802 30p

Intel picks UK for 1,200-job European hq

by Robert Parry

UP to 1,000 jobs will be created as a result of plans by US microchip maker Intel to centre its European expansion on its UK site at Swindon.

As well as housing the company's Northern European headquarters, looking after the UK, Scandinavia and Benelux, the Swindon site will provide computer operations covering almost all Europe.

The computer service on a newly installed IBM 4341, is Intel's first computer centre in Europe. It will take over work previously done in the US and on bureau services co-ordinated through Brussels. Component testing and quality assurance equipment has been moved in from Paris and, like the systems repair facility, will serve the whole of Europe.

Intel's UK staff has grown from 20 to 200 in the 18 months it has been in Swindon.

According to Intel chairman Gordon Moore, world sales have expanded significantly in the past three months, and Moore is sure this marks the end of the "peculiar recession" — peculiar in that product volumes stay growing while prices plummet and figures are down. "Intel is shipping 40% more parts than last year", comments Moore. "We're just enjoying it less."

He feels technology is forcing the industry to make more complex products, leading to Intel's move towards systems products, selling at the level customers want: components, boards or boxes.

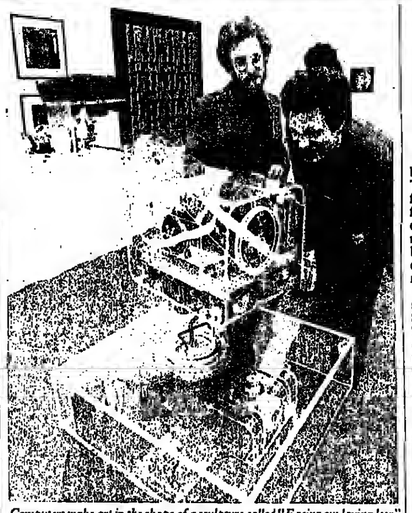
Plans to develop the Swindon site reflect the growing importance of systems products. Moore says that the "masterplan" for the site, which will eventually house up to 1,200 people, will include manufacturing, but this would be systems integration and software development, not wafer processing. So far the masterplan has no end date or timing, however.

Swindon is Intel's first wholly-owned site in Europe, one reason for moving operations involving large amounts of capital equipment there. "It's better to put these into our own facility, where we have control over the building and the floorplan", says European general manager Barry Cox.

Intel chose the UK for the first — but not, according to Cox, the last — European building it owns because the UK represents a significant market, especially for systems. When compared with the other contenders France and West Germany the costs of building and labour are much less, he says. Swindon was chosen within the UK because of its easy access to an international airport.

System and component warehousing for all Europe are now located in Swindon, says Cox, adding that it would be inefficient to have a geographical separation between the warehousing and quality assurance or testing operations. As well as the equipment already brought in from Paris, there will be £300,000 of new spending on machines.

MOORE . . . "End of the peculiar recession".



Computers make art in the shape of a sculpture called "Facing out laying low" by Norman White at an exhibition of Canadian computer art held in London last week. The sculpture moves and makes sounds according to the light patterns around it — and therefore the people looking at it. Report, page 3.

Revival of the Luddites

by David Craver

THE explosive growth expected for the UK computer and information technology industries could be severely restrained as a result of a sudden surge of membership in a neo-Luddite society opposed to the introduction of new technology.

Formed only 18 months ago at a polytechnic on the South coast SOT, or Stop the Onslaught of Technology, claims it now has over two million members throughout England, Scotland and Wales.

Branches have recently been set up in both Northern Ireland and the Irish Republic, and the society's organisers hope to spread on to the Continent in the near future.

Bob Gayler a technician at Brighton Polytechnic who started the movement, says he received his inspiration from the Luddites who in a short burst of fury from 1812 to 1818 set about destroying machines in the North of England.

As well as being distressed with the job losses he sees going hand in hand with the introduction of new technology, Gaylar expresses concern with how machines have usurped the decision-making process of many individuals. He cites the massive computerisation of local bus routes which does nothing to stop the problem of bus bunching, and also the number of "red alerts" in the US defence system.

Information Technology Minister Kenneth Baker was astounded at the rapidity with which SOT has grown, and said that Ministers were giving extremely high priority to setting up a special task force to formulate an official government response.

Red tape ties up computer firms

by Andrew Thomas

RESTRICTIVE planning regulations and a lack of adequate property are hampering the development of the British computer industry. UK computer companies are being restricted, and foreign companies looking to invest in manufacturing plant in the UK may go elsewhere.

These are the major findings of a survey carried out by Computer Weekly, in conjunction with chartered surveyors Herring Son & Daw, into the problems computer firms encounter when seeking premises. The survey covered companies in the so-called golden triangle bounded by Reading, Basingstoke and West London, prime location for computer firms.

David Willcocks, partner at Herring Son & Daw, says the need for a survey became clear following property searches carried out for his clients.

"Time and time again we came up against barriers in trying to find buildings suitable for high technology industries in the right locations," says Willcocks. "Landlords are not keen to allow office accommodation to be converted for light industrial use.

"There is just nowhere for computer and electronics companies to go when they want to expand," he says.

One way round the restrictive planning regulations is to build a purpose-designed centre, but that is an option open only to companies large enough to have the resources.

Examples include DEC, with its headquarters at Reading, and Intel which last week announced it is to expand its UK base into a European headquarters at Swindon (see story this page).

● Lack of sites — page 17

Brakes taken off CAFS

by Andrew Thomas

ICL is about to initiate a major marketing push for its content addressable filestore system, CAFS. Although recognised as a concept with immense potential, sales have been disappointing to date with less than 20 systems installed.

Drawbacks of CAFS have included the restriction of its use to the old 1900 series operating systems, running under the DME emulation microprogram, and the mandatory attachment of the ageing 60 Mbyte EDS60 disc drives.

The obligatory use of EDS60s, in addition to restricting the volume of data available to the CAFS controller, posed problems on data rates. Despite tuning exercises to improve disc drive the inherent power of CAFS lay largely untapped.

Next Tuesday, ICL is due to announce several important CAFS products to the CAFS user group. Larger discs will be made available, almost certainly the 200 Mbyte EDS 200 device. The current limit is 14 EDS 60 drives, giving a maximum online storage capacity of 800Mb.

As well as larger overall storage capacity there will be enhanced reliability and faster access times.

ICL is also expected to make CAFS available to users running under its 2900 native mode operating system, VME 2900.

Derek Ward, systems manager at Thorn/EMI and a member of the CAFS user group, cites the restriction to 1900 range operating systems as his main complaint. On top of this he adds: "I'd like to see the removal of the special disc format needed at the moment — it can be a bit inconvenient."

Other enhancements expected include a local area network CAFS system, based on the ME29 small mainframe. The LAN system is aimed at the inter-office systems market, and should greatly increase the sales potential of CAFS.

An economy version of CAFS, driven by the Intel 8086 microprocessor, should also put in an appearance.

● The Perq scientific graphics computer is set for a reduction in price of more than 20% from today. An ICL spokesman denied reports that the cut had been forced on the company due to poor sales of the device, saying that the £19,950 price tag for a typical configuration reflected managing director Robb Wilmot's stated intention of bringing prices down "very low" by 1985.

INSIDE THIS WEEK'S ISSUE

Philips, CDC to have video disc system by 1984

by Kevan Pearson

PHILIPS, the Dutch electronics group, and Control Data are getting together to exploit the video disc for computer applications. The two companies have formed a joint venture to develop a system and expect to have a marketable product within two years.

The deal involves setting up two research centres – one in Holland to develop the actual disc, and one in Colorado Springs, to develop the write/read system.

The result could be a product capable of storing one gigabyte costing less than $10,000. This compares with prices about 3½ times greater for current state of the art magnetic disc technology.

Despite the obvious price advantage, the product is not expected to compete in the main DP market because of one drawback – the data cannot be erased and the disc reused. However, the two companies see a major place for the disc in the office, replacing conventional filing and archive systems.

The disc is rugged and can be handled without damage, and there is no danger of heads crashing since the read and write heads are lasers, positioned well above the disc.

Philips has already produced an experimental electronic archive called Megadoc. The system is minicomputer based and can store 2,500 A4 pages on a single disc in uncompressed form, and ten times this number if data is compressed.

The deal between CDC and Philips is only one of several ventures trying to get a commercial system on the market. French company Thomson-CSF and Xerox are working together and Toshiba and Matsushita of Japan and RCA are all working on individual projects.

They all hope to have commercial systems within two years. The Thomson-Xerox partnership is using a different technique to Philips-CDC.

The Thomson system uses a highly sensitive polymer, which is vaporised by the laser. The gas then pushes upwards into a metallic layer causing a slight bubble. The Philips system actually burns holes in a metal layer.

The Philips-CDC venture is also being supported by Honeywell and CII-Honeywell Bull, through their partnership with CDC in Magnetic Peripherals, the company which will manage the American side of the venture.

Services profits drop

PROFITABILITY appears to be on the slide for computer services companies in the UK. An analysis* of the financial performance of 60 leading companies by ICC Business Ratios, shows that average profitability rose from 11.6% in 1977/8 to 11.8% in 1978/9 but fell back to 9.7% in 1979/80.

The report, covering the three year period to October 1980, shows Data Sciences International having the highest return on capital – 151% against an average of 23% for the remainder of the companies covered in the report, climbing from 146% the previous year and 111% the year before.

*Computer Services, published by ICC Business Ratios, 23 City Road, London EC1. Price: £112.

WORDEN . . . "The SDP of database systems".

Logica's Rapport for 16-bit market

by Maggie McLennan

A 16-bit microcomputer version of ICP-award-winning database management system Rapport, is planned by its developer Logica. Although a subset version has been announced for 8-bit micros running under CP/M, the 16-bit release is expected to contain all the original mini and mainframe features, including the Interactive Query Language (IQL) interrogation facility.

"We think that it will suit applications software developers," commented Robert Worden, Logica's product planning manager. "We are doing a Unix implementation and a Xenix system is being installed at the moment."

Xenix is Microsoft's derivative of the Unix portable time sharing operating system, which is supplied and supported by Logica in the UK.

Described by Worden as "the SDP of database systems," Rapport is reckoned by Logica to have captured the middle ground in this type of software. "There are conservative databases such as IDMS and Total, chosen for their reliability, and there is the radical, relational Ingres, and its 'power to the user' approach that leads to anarchy in control. The central approach has a great deal to offer," he said.

The bulk of Rapport sales are to the "super-mini" market, on machines such as the Perkin Elmer 3200 series and SEL 32 equipment. Micro Rapport aims now to capture the CP/M market.

"I believe there is now a niche in the CP/M environment for a serious database system. Others on the market are dressed up to seduce the first-time user, with very little capability to extend. We are offering a system whose performance is not going to fade once you get past 200 or 300 records on the database," said Worden.

Primarily aimed at sales through OEMs, Micro Rapport will run on any CP/M-based machine with 64K RAM and Microsoft's Fortran 80. It has already been installed on Equinox, SuperBrain, Casu Super C, Zilog MCZ, Cromemco and TRS 81 machines. The first licence costs £900, with additional charges of £450 for subsequent ones.

Prices for the 16-bit version have still to be decided, but Logica says it will be "considerably cheaper than the 16-bit mini version."

Contract tax threat postponed

by David Craver

CONTRACT programmers have been given at least a temporary reprieve from taxation of 30% of their income at source.

Inland Revenue proposals which would require agencies to hold back a portion of the revenues of contract programmers and other workers have not been included in the 1982 Finance Bill, as expected.

The Inland Revenue plan, which first surfaced in last year's Finance Bill as Clause 34, was designed to catch what it believes are the large number of tax cheats among agency workers.

But industry feared that the scheme would hurt the formation of new business, as well as curtail what it sees as the essential flexibility of the workforce.

The Inland Revenue schemes have been opposed by a 12-member group led by Stan Mendham of the Forum for Private Business. The group published its own plan for taxation of agency workers in January, and the absence of any mention of taxation of agency workers in this year's Finance Bill makes Mendham hope Inland Revenue will revise its approach.

Latest Pearl is for the end user

by Claire Gooding

THE Pearl program generator, one of the first code-writing tools for microcomputers, has been transformed into an end user tool and relaunched in the UK. The new version is called Personal Pearl.

Pearl in versions I, II and III caused a lot of excitement when it surfaced in the US some years ago, but never caught on in the UK. Earlier versions were aimed at experienced programmers or at least skilled micro users, but author Bill Stow has now produced a version which enables someone without any computer experience to sit at the keyboard and produce a working system in a matter of hours.

"We realised three years ago that we were not working for the end user," said Stow, launching the UK sales operation Pearl International, last week. "Everyone has a unique way of doing what is essentially the same job, and we have concentrated on making the micro an individual tool which will reflect that unique something."

Stow and his team have concentrated on the "human engineering" of the system, hooking in the CP/M operating system and a help utility which means that the user always knows what the machine is up to, and rarely has to resort to a manual.

The only written record needed is some memory-jogger of names and fields already used so that they can be used again to link files when designing reports. Word processing is a built-in facility.

At present the system works on any CP/M machine, and according to Pearl International director Tony Frowd, an Apple III version will be released in May; 16-bit versions should be available "without too much effort". The product has already been adopted for the Osborne micro and is being sold with it as a self-tailoring accounting package.

Pearl International realises that it will have some difficulty persuading a sceptical market which has heard it all before that it really can deliver a database-cum-report generator and interactive information system for under £200.

Personal Pearl has already had a false start in the UK when Teradec launched, then dropped, the product because of delays in the development.

STOW . . . Concentrating on "human engineering".

ComputerWeekly

Thursday April 1, 1982

Vol 32 No 802

IPC Electrical-Electronic Press Ltd, Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS. Telex: 892084 BISPRS G

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CIRCULATION

Terms of circulation control Computer Weekly is sent free of charge to the following categories in the UK only. Company directors, company secretaries, management service executives, civil servants responsible for computing, management/computer consultants, DP managers/supervisors, systems analysts/O&M officers, programmers, operators and computer field engineers.

Subscriptions UK £22. Students £11; US, Canada $63.80, Students $48.80; Europe CSI £18.56; Students £14.56; Middle East, North & South Africa (airmail) £52.64; North & South America, Southern Africa, South-East Asia (airmail) £62; Far East, Australia & New Zealand (airmail) £70.34.

Circulation Dept IPC Business Press (S&D) Ltd, Cobbett House, Perrymount Road, Haywards Heath, Sussex. Tel: 0444 59188.

Publishing Director: Dr J A G Thomas. Editorial Director: Chris Hipwell. Published weekly on Thursday. Registered at the Post Office as a newspaper. ISSN 0010-4787.

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Government urges UK companies to compete on Telecom networks

by Donald Kennett

THE Department of Industry is boosting its telecommunications liberalisation programme with a campaign to encourage British companies to run new value-added services on British Telecom's networks.

It has hired a marketing company, London-based Marketing Solutions, to help bring home the message, in a simple single-page guide.

From today, it becomes permissible to run value-added services in competition with BT and the criteria for judging the added value are outlined in the guide. They are that the service provider should store the user's information for subsequent retrieval or forwarding, or that it should be processed so that the format, protocol or content are clearly altered.

A three-man panel chaired by Professor Kenneth Cattermole of Essex University, who has advised the DoI on telecommunications for the last three years, will advise the Industry Secretary on ambiguous cases and on general policy issues.

Other members of the panel are Stephen Fineb, chairman of the Telecommunications Managers Association and regulatory affairs adviser at British Petroleum, and Brian Carsberg, professor of accounting at the London School of Economics.

Among the first to get the DoI's message were the 200 members of the Telecommunications Users Association who attended its conference on Producing the Results from Liberalisation.

Industry Minister John Wakeham told the conference that although standards for network attachments had taken longer to develop than either the government or industry would have liked, modem manufacturers were already reaping the benefits.

Basic standards for network compatibility are expected from the British Standards Institution in July and these will enable the British Approval Board for Telecommunications to open for business as a wholly-owned subsidiary of the British Electrotechnical Approvals Board.

Wakeham says that value-added services will not be licensed on an international basis and the government has no plans to change that in the short term. But in his view, developing a market for network services will itself open the way for liberalisation in other countries.

Proposals to liberalise equipment supply throughout Europe have been shelved because they were unacceptable to some unidentified countries. But there is no shortage of choices of countries willing to agree reciprocal trading arrangements.

There are fears that data protection legislation would generate costs and red tape enough to prevent an explosion of new services. But the lack of any legislation would be a disincentive to companies such as credit card organisations which wanted to operate internationally.

Yes, but is it art?

Canadian computer art on show

by Rory Johnston

A FRESH understanding of the value of computer art in the minds of the public is the aim of an exhibition that has just opened at Canada House in London. On show are pictures, sculpture, and music by seven Canadians who use computers and electronics, either as tools in their work or as semi-autonomous creative devices, and the results have been selected as important artistically as well as for their novelty.

The exhibition's organiser, Brian Reffin Smith of the Royal College of Art in London, explains that "computer art" has got a bad name because hitherto so much of it has been trivial: Snoopy printouts or geometric patterns that could just as easily have been made with plastic drawing toys.

His selections for the exhibition aim to show work that is genuinely interesting and also indicative of how the computer can inspire original ideas.

An example is Chris Crabtree's ser of "narrative" pictures in which sequences of strange figures, in an order chosen by the computer according to a mathematical process, appear to tell a story.

A "sculpture" by Norman White, made out of electronics and mechanical parts, has environmental sensors and moves in place according to what it perceives.

The show is open every day except Saturdays until April 20.

Mercury man attacks BT liberalisation

by Donald Kennett

STRONG criticisms of the government's management of its telecommunications liberalisation programme have come from the architect of the Mercury alternative network.

Speaking at the Telecommunications Users Association's conference last week, consultant John Anderson of Micro Electronics Design said that the necessary technical resources were not being applied to the progress of standards making, user interests were not being represented in discussions on how to regulate the market, and UK industry was in danger of being undermined by a flood of imports from countries that happened to be more advanced at the moment.

"There is a fair degree of exasperation about standards appearing," he said. "They must be thorough and irreversible by the next election and it cannot be done by having committees of 20 or 30 people working on them. BSI has not made sufficient progress."

The Department of Industry itself ought to have better technical back-up, he added. It was trying to do in three years what the US did in 10 or 11, so its heart was in the right place, but there was not a single technician in the Department handling liberalisation and it ought to have in-house resources.

Opening up the market must be managed in a way that advances the UK economy rather than by imports. "People are not addressing this dimension and it is for the DoI to tackle. There is an absence of standards for British manufacturers to design against.

"Liberalisation has been much more rapid than previously expected. There is a need to take stock of the options now in a public debate to redirect and strengthen the programme, otherwise decisions will be taken for all sorts of reasons other than for user interests."

Trader Point opened to outside distributors

by Brandon Gamester

ICL has opened its arms to a number of outside distributors as the first in its Trader Point scheme set up to boost sales through third parties. It has also announced plans to centralise its customer support for all its systems in four new centres.

The Trader Point deals are with Diktat and Besufort Micro Systems (to distribute ICL's new personal computer), with Systemsolve (to market the MB29, System 25 and DRS range), with a new company, Triple S (to program and install systems), with Hestair Dataline (for more processing systems), and with EMS Consultants and Opco (for a number of software packages).

More than £14 million has been invested in spare parts for the support centres. They will provide telediagnosis backed by a team of 25 engineers at each centre, including a mobile force to carry out on-site repair and maintenance.

ICL also plans to boost the Trader Point image with a £500,000 advertising campaign in the national dailies and trade Press. New Trader Point catalogues promise to list 1,000 software packages for ICL systems by July.

Gandalf is growing

HALF-YEAR turnover at Gandalf Technologies, the Canadian communications company, jumped 45.5% to $25 million for the 26 weeks ended January 30, compared to a year ago. Pre-tax profits soared 95.4% to $5.1 million for the same period.

Gandalf says that the growth rate of revenues slowed down in the second quarter of the period.

UK escapes most of Texas' 2,700 job cuts

by Robert Parry

LEADING US semiconductor manufacturer Texas Instruments has laid off 3% of its worldwide workforce, about 2,700 people. But according to Texas' UK personnel director Martin Wibberley, there will be very little impact in the UK.

About a dozen redundancies will be caused by reorganisation of sales and marketing departments in Bedford and Plymouth which will also result in transfer of jobs between the two sites.

"The fortunate thing from the UK point of view is the wide range of Texas' activities here. This breadth gives strength," says Wibberley. Texas' UK business spreads from semiconductors, through distributed computing, to geophysical surveying.

The bulk of the 2,700 lay-offs hit US plants – 1,700 jobs have gone at Dallas, Houston and Sherman in Texas – primarily in the semiconductor and distributed computing business. Short-term measures like extra holidays and short working weeks and previous lay-offs have not proved adequate to overcome weak demand and excess capacity.

Texas Instruments recently reported a 49% decline in income for 1981, falling to $108.5 million on sales of $4,200 million. The 1980 figures were $212.2 million income from sales of $4,090 million. It has 50 plants worldwide, 16 in the US, the remainder in Europe, Latin America and Asia.

● National Semiconductor, which has just announced its first quarterly loss, is trying to cut costs but avoid lay-offs. The latest move is a six-month pay freeze for all 35,000 employees and the suspension of managers' bonuses. The company views laying off workers as "a last resort".

The boys of Perryfields High School talking with Kenneth Baker about their control project.

Micro prizes for ten schools

by Philip Hunter

IN what he described as "the most modern thing ever to happen at Admiralty House," Information Technology Minister Kenneth Baker last week awarded microcomputer systems to ten schools as prizes in the Department of Industry's second Schools Computer Competition.

Consolation prizes of microcomputers without the frills were awarded to 90 other schools.

One of the star prize-winning projects, from Perryfields High School in the West Midlands, set out to demonstrate how a computer can be used to control mechanical devices such as a robot or crane. The boys had constructed a menu-based input system using a light pen and made a simple joystick for controlling a crane.

"We worked on the project most lunch-times," commented head boy Richard Hallman.

Projects aimed at easing the thankless task of weather forecasting were commonest of the 90 consolation prize-winners. These were either automatic weather stations, or systems to help process the data, although there was also a program for display of satellite weather pictures.

The ten joint winners came from two categories: Five star prizes for ordinary schools, and five prizes for special schools of physically or mentally handicapped children.

The star prizes were awarded to schools in Carlisle, Braintree, Norwich, West Midlands and Port Glasgow. They comprised a Research Machine 380Z, available under the DoI's Micros in Schools scheme, a high resolution graphics board and associated software.

The special schools were given systems tailored specially for their needs. Winners in this category came from Biggleswade, Cambridge, Cirencester, Coventry and Belfast.

University sells text compactor

by Philip Hunter

A PROGRAM which will compress files of English text into less than half their original size at copying speed has been put on the market by Keele University.

It is being marketed in the UK by Keele Codes Ltd (KCL), a company set up in co-operation with the University, and will be launched in the US in May.

It is aimed especially at the small business user, but anyone generating large amounts of text will find it useful, says Dr Dennis Andrews, managing director of KCL, whose brainchild the program is.

The program consists of an encoding part, which KCL claims will compress any Ascii file of English text into at most half its original size, and a decode part to restore the compressed data to its original form. It occupies 9K and so could reside in the space saved by compression on most discs according to Andrews.

The time saved by having less data to copy to disc is slightly greater than the time taken to perform the compaction on both micro and mainframe computers, he says. Decodes are faster still, Andrews adds.

The program uses an algorithm based on the fact that certain combinations of letters are more likely to occur than others at each point of an English word. The most likely combinations can therefore be compressed into far fewer bits of storage than are normally needed.

Electronic magazine on Prestel

by Donald Kennett

ELECTRONICS magazines might have been expected to be among the first to circulate on Prestel, but apart from the pioneering efforts of Electronics Weekly and Practical Computing, there has been little on offer.

Starting next week, however, Prestel will carry a new venture, Electronic Insight. The magazine is designed to provide a focal point for information on sectors of the electronics industry including home and office computers, hi-fi, television and satellites.

The magazine's founder, Bob Denton – who has previously been involved with marketing Tangerine Computers' Tantel viewdata adapters, Dixons' television games and Texas Instruments' TI 99/4 home computer – aims to attract advertisements which will support the editorial content in much the same way as they do in paper magazines.

"People have to read a large number of specialised magazines to keep up with what's going on," said Denton. "What I want is a highly unspecialised storehouse of information, succinct presentations, kept up to date, with the possibility of actually ordering goods at the end."

At the launch on April 5 the magazine will have 1,000 pages and it is expected to grow to 10,000 by the end of the year. The editorial content will consist of news, commentaries, product reviews and buyers' guides. Routes will be provided from the editorial to the relevant advertisers' pages, which will include ordering facilities. Denton also wants to line up cross-routeing agreements with other information providers.

The first cross-routeing agreement is with British Telecom, to provide a catalogue to the telesoftware pages now being set up on Prestel's own database.

CAP uses Ada to control robot arm

by Claire Gooding

ONE of the first applications written in the new real time defence language Ada is up and running in Reading, where it is controlling a robot arm in various simple tasks.

CAP Reading, which took delivery of the Ada compiler and workstation from Telesoft in the US at the end of last year, has been learning its way around the compiler, and training programmers in coding Ada. Because CAP is also involved in robotics, it hit upon the idea of using Ada to control a robot as a lively way of demonstrating the new compiler.

Sara Pearce, who has been with CAP for six months, is probably Britain's first full-time professional Ada programmer. John Weeks, manager of the Advanced Software section of CAP Reading's Industrial System Group, was looking for a new graduate who could migrate from Pascal to Ada: "We thought it would be a good progression path," he said.

Pearce, whose degree in material sciences has given her some Pascal and Fortran experience, has also programmed in Basic and MicroCobol.

"I didn't find Ada easy to learn. It is very much larger than Pascal, and there are a great number of structures to learn before you can actually produce anything," she said.

The listings of the programs she has written to control the movements of the Armdroid robot arm show a highly structured language, well laid out and documented within the source code so that even without knowing Ada it is possible to follow what is going on.

As yet, the Telesoft implementation does not have full Ada facilities, but as far as Weeks knows, no-one else has either. It is Telesoft's goal to produce and implement full Ada by the end of the year.

As yet, CAP has not sold any of the £15,000 Ada workstations, but it reports a high level of interest. The seminars it runs to familiarise people with the Ada compiler are oversubscribed. Most interested are the other members of the two Ada consortia, Augusta and SSS, which are involved in defence and industrial programming.

Weeks estimates that thorough training in Ada will take a year to 18 months. "I doubt if much will happen on the applications front until 1984 to 1985," he commented.

Opportunity window shut

by Donald Kennett

THE opportunity window for baseband local area networks, the length of time during which they can offer a viable and competitive solution to internal communications problems, is being shut by broadband networks, according to US researchers Strategic Incorporated.

Broadband networks use modulated radio frequency carriers to provide several channels for digital and analogue transmission on the same cable, instead of putting a single digital data stream straight on to the cable as baseband networks do.

Strategic Inc recently predicted that the Ethernet baseband networking system would be the ruination of its originator, the Xerox Corp, because it was so heavily committed to it for its office products strategy.

Strategic's £695 report on Baseband Versus Broadband, which is distributed by the UK subsidiary of International Planning Information, says that broadband networks are more flexible and just as cheap.

Warning on EEC withdrawal

WELSH Secretary Nicholas Edwards has drawn Parliament's attention to the results of a recent American survey which showed that 60% of electronics firms interviewed would find the UK no longer suitable as a base for European operations should the UK withdraw from the EEC.

Mitel, for example, which provided an enormous number of job opportunities would not have established itself in Gwent if it had not been for our membership of the EEC, he claimed.

SALES BRIEF

Cambridge to install IBM top machine

CAMBRIDGE University Computing Service is replacing its 10-year-old IBM 370/165 with IBM's top machine, the 3081 D16. The present operating system, a version of MVT enhanced by Cambridge, will run on the new machine under VM.

It is expected to start taking on the service's 4,000 users from September. Meanwhile, the Cambridge team is working on an equivalent enhancement to the 3081's MVS operating system.

BT spends £37m

RECENT beneficiaries of British Telecom's massive ordering programme include Mitel, Ferranti and ITT. Mitel is to supply a second batch of PABXs, worth £16.5 million, with between 16 and 120 lines by November 1983. Ferranti is to supply 800 VDUs and 120 Ferranti PT7 controllers costing £2 million for two regional office networks; and ITT is to supply over £18.5 million worth of screen-based telex terminals.

Into Europe

US test equipment company Teradyne has won its first European telecommunications orders. Hull's independent telephone administration has ordered 4Tel Series III subscriber line automatic test systems worth about £500,000 for its 14 local exchanges, British Telecom has ordered four trunk exchange systems for trials in Bristol, and the Belgian PTT has ordered three local exchange systems.

MoD system

SCICON has won a further contract to design and implement a petrol, oil and lubricants information system to be called Polis, for the Ministry of Defence. The system will be based on the Adabas-M database management system from Adsbas Software running on a pair of Digital Equipment PDP-11/44 minis.

WP for Society

WANG has sold a £100,000 word processing system to Leeds Permanent Building Society, comprising an Office Information System in configuration with 13 terminals and 14 printers.

Expansion aid

CAMBRIDGE Interactive Systems has supplied a £250,000 computer aided engineering system based on a Prime 350 minicomputer to a Poole-based electrical and electronic equipment supplier, Aish & Co, to help it expand from naval electronics into applied microelectronics and computer aided design services for industrial users.

Coal control

WEST Midlands-based process control computer manufacturer Babcock-Bristol, part of the Babcock industrial group, has won a £220,000 order for four of its Micro-B control computers for the National Coal Board. The machines will be sited at two Midlands collieries and will be used for centralised sequential start-up and shut-down of operations.

US direct electronic mail service falls short of 20m message target

by Howard Karten

THE US Postal Service's direct electronic mail system, ECOM, may be in trouble. Begun in early January, with projections of up to 20 million electronic messages a year, the system has lately been carrying only some 6,500 messages a week.

Postal Service officials in Washington attribute the low volume to two problems: Uncertainty among would-be mailers over a pending law suit by the Department of Justice, which aims to stop ECOM; and a backlog in the certification of customers wishing to use the system.

ECOM is a hybrid electronic mail service. Commercial firms which wish to use the system must have their computer and telecommunications links certified by the Postal Service. They can then transmit their electronic messages to any of 25 ECOM Post Offices in major US cities, provided they transmit at least 200 messages at one time. The Post Office prints the messages and inserts the hard copy into the regular postal service for local delivery.

The cost is 26 cents for a one-page message (about 250 words), and 31 cents for a two-page message. Regular postage for a two-page message would be 20 cents (or 17 cents in some cases).

Critics point to the 200-message minimum, the inability to enclose inserts such as return envelopes, and the marginal improvements in elapsed delivery time, as key issues. And the Postal Service does not now accept hand delivered tapes for entry into the system.

Postal Service officials say they presently have 17 certified customers. Of these, Western Union Electronic Mail Inc is said to be the largest single customer. The company incorporates its own electronic mail system which is similar to ECOM, and is acting as a value added carrier, batching customer messages for transmission to achieve the 200-message minimum.

A Postal Service spokesman claims that the service has no preset projections for volume at this point. Even if volume fell significantly below 20 million in the first year, it is extremely unlikely that the service would be cancelled, say officials.

MANNING . . . "No extra expense for Honeywell users."

'IBM will have to adopt the ISO model'

by Boris Sedacca

DESPITE IBM's decision to go it alone in its communications networking strategy in the mid-1970s, it will gradually be forced to move over to the International Standards Organisation's model.

This is the view of Steve Warner, senior product consultant at Honeywell, who contends that IBM's own customers and the European government organisations, including PTTs, will not want a telecommunications environment dictated by IBM.

"IBM could have forced its Systems Network Architecture through as a de facto standard, but SNA is very dependent on a central host computer which places restrictions in defining the domains administered by the host.

"ISO has learnt from SNA and has made its system entirely open-ended. IBM now participates in ISO committees," he said.

Warner claims that IBM has already given an indication of this shift in direction by marketing in Europe some black boxes which sit in front of an SNA system and which handle the ISO X25 protocols instead of IBM's own Synchronous Data Link Control.

Warner also reiterated Honeywell's commitment to the ISO model. The company's seven-layer Distributed Systems Architecture includes the bottom three protocol layers from ISO's eventual seven-layer model. The other four layers still have to be finalised by the ISO committee, so Honeywell has implemented the anticipated ISO draft standards for the top four DSA layers.

Keith Manning, director of large systems marketing operations at Honeywell, added that users on DSA would not be committed to additional expenditure if the finalised ISO standard differed from DSA, and DSA had to be changed.

Last year, Honeywell announced SNA protocol handling on its DPS6 small business system based on the Level 6 mini.

PRYOR . . . "large market for standalone systems."

Project management system for UK soon

by David Craver

A SUCCESSFUL US project management system will soon be available in the UK and the European continent through Sydney Development, the Canadian-owned software house.

Sydney Development has been selling its own Connect II project management systems to large UK IBM users for the last year, but now has an exclusive arrangement with T&B Computing of Michigan for its standalone Prime-based system, called Track 50.

T&B has a "joint marketing relationship" with Prime in the US, and Sydney Development is hoping for a similar arrangement with Prime in the UK. Construction, as well as communications networks, research establishments, shipbuilding and other manufacturing industries are the main targets for the system.

Ray Pryor, Sydney's UK managing director, says Track 50 complements Connect II, and will allow the company to attack what he sees as the large market for standalone systems. Track 50 is primarily for scheduling contracts, with a typical four-user system costing about £80,000. Pryor says it can go on the project site, where it can also be used for general accounting routines.

The system is particularly useful for highlighting critical activities in a project by means of constantly updated network analysis chart. It could, for example, highlight all phases of a contract involving a particular craft, showing those which were behind schedule and likely to put the whole project over its time limit.

The agreement is initially for three years, but T&B vice-president Cecil Murray says it has no intention of setting up its own operation in Europe. T&B has sold 35 systems in the US in the last 18 months and four in Europe.

The system runs on a Prime 250 up to an 850. A four-user entry-level system on a Prime 250-MOD II includes 96 Mbytes of disc, a 350 line per minute printer/plotter, and software.

I'm in charge–Dreyfus

by Jack Gee

DECISIONS on the future of the newly-nationalised sector of France's computer industry will be the sole responsibility of the Ministry of Industry, Pierre Dreyfus, the 73-year-old Industry Minister said in Paris.

"Supervision will be the task of the Industry Ministry alone. Naturally the nationalised companies will also have relations with the ministries which are clients for their output," he said.

Supervision would be exercised in a simple manner. "When the nationalised groups submit to us their long-term plans, we shall discuss these with their senior executives.

"The problem of providing capital and access to the money market will be discussed. We shall express our viewpoint on whether the programmes submitted to us make sense and how these can be co-ordinated with those of other firms in the public sector."

Honeywell claims a lead in looking after the customer

by David Craver

RECOGNISING that maintenance of computer systems is inflation rather than technology driven, Honeywell has spent the last three years revamping its service structure to keep down the cost of customer service.

At the heart of its reorganisation is a central service centre in Hounslow – a facility purchased, rather than leased as is Honeywell's custom in the UK. That centre combines a hardware software response and diagnostic operation with a special network control function which enables Honeywell to simulate any of its customers' communications networks.

By centralising and computerising these three services, Honeywell believes it has stolen a march on its competitors.

But Kevin Kennedy, head of Honeywell's customer services division, says that all the leading computer manufacturers are going in a similar direction, and there are lessons to be learnt from each.

In the past access to a computer manufacturer's expertise depended on where the user was located. Now, Honeywell, like others, uses its own computers to centralise the activity, and this allows customers to tap the resources of the top hardware and software people in the country.

Kennedy says they are not yet able to fix anything centrally, although the majority of software problems can now be solved by telephone, and a software patch can be transmitted down the lines. That, says Kennedy, "is the area of most satisfaction to customers and ourselves."

Preventive maintenance is being designed out of most products, and remote and customer diagnostics are the trend. But the better the product, the less challenge there is for a computer company's own technical people. That means the loss of some of the satisfaction of investigating and solving problems.

Kennedy says Honeywell is often in a position where it can define a problem before a service engineer goes to a customer site, which could be seen as de-skilling the job. But Kennedy disagrees. While he says it does give rise to social or behavioural problems, the change in the service engineer's relationship to the customer has broadened the job. The engineer now "looks after the customer, not just the box", which calls for the development of more communication skills.

And, most important, with hardware costs dropping, and inflation-driven maintenance costs as a result appearing that much bigger, the central service centre "enables us to hold down some of the factors that drive our prices".

The first line of support at Honeywell is the computer response centre in Hounslow, where requests for service are logged by an operator in front of a display terminal. That call triggers all action, and works on a simple call escalation scheme.

The second link in the chain is the technical assistance centre, which was created at the same time. The initial call automatically goes to the technical centre, before an engineer is despatched, where the company's hardware and software specialists are located. They have access to technical documentation, a technical database on all recognised problems, and remote access to customers' equipment so that users' systems can be simulated and test and verification routines can be run.

The third link, the network control centre, is the latest innovation, and stems from the fact that communications expertise is still not widely available and is difficult to train.

Honeywell put a team together with all the proprietary equipment from different manufacturers that its customers had installed so it can determine where in a network breakdowns occur. While it started off as something for Honeywell itself – how to correct a customer problem – Kennedy found that 40% of the calls were coming from customers who wanted advice on how to set up a network. That led Honeywell to develop a program to compute the most cost-effective network.

KENNEDY . . . . "Engineer now looks after the customer, not just the box".

Anti-trust case may re-open

by Kevan Pearson

WITH a decision on the EEC case against IBM expected within the next few weeks, there are now moves to re-open the US anti-trust battle between the company and the Justice Department.

Judge David Edelstein, who has presided over the case since its inception, has ordered both IBM and the Justice Department to appear on April 8 to explain why the decision to drop the case should be upheld. The move is at the request of Philip Stern, a wealthy US legal author.

He is being represented by two former Justice Department lawyers, who allege a conflict of interests on the part of William Baxter, the official in charge of the case against IBM.

Baxter, who ordered the case to be dropped in January, had previously acted as a witness for IBM in one of the many private anti-trust cases brought against it. Stern claims that the case should not have been dropped until the legal process had run its course, resulting in a judicial decision rather than an internal decision by the Justice Department.

In Brussels the EEC is expected to decide within three to four weeks whether IBM is guilty of abusing its position in the European data processing market with unfair trade practices.

The Commission is being careful about the facts of the case, since a guilty decision is almost bound to result in an appeal to the European Court of Justice.

If the decision goes against IBM there will have to be a further hearing to discuss what remedies the Commission will apply.

Thomson, Siemens in link talks

by Jack Gee

THOMSON-CSF and Siemens have begun negotiations in an attempt to pool their efforts in the manufacture of components for computers, French industrial sources reported in Paris.

Observers said that Thomson, as Europe's third ranking manufacturer in this field after Philips and Siemens, was strongly placed to establish viable manufacturing arrangements with the Munich-based company.

Both firms are known to consider that the time has come for joint action to repel the Japanese and American invasions of this sector in Europe.

Pierre-Leonard Mestre, components chief at Thomson-CSF, said: "It is now more urgent than ever before for Europe to combine its forces. These are dangerously dispersed at present.

"We are trying to establish partnerships which are not easy to achieve. But I hope that over the coming months they will help to strengthen Europe's position."

Thomson-CSF produces one-third of France's computer components and keeps 14,600 of its personnel busy in this activity, producing a turnover of 3.4 billion francs (£340 million) last year.

Mestre said Thomson-CSF was entitled to a leading role in the new French government microelectronics programme, because other French manufacturers were involved in joint ventures with Philips, National Semiconductor, Harris and Intel.

Thomson is planning to expand sales of computer components to Japan after getting off to a slow start there.

OCR system can read 750 documents a minute

by David Craver

CAPACITY to handle both alpha and numeric handprint at speeds of up to 750 documents a minute is one of the most significant features of a new optical character recognition system from OCR ScanData.

The secret to the high handprint read speeds is to capture unrecognisable characters on video and store them on disc for replay and correction after the main batch job. Most systems, says marketing director Chris Bryce, have to stop the scanner and key in the correction from a terminal, which he calls "hopeless".

The new 2280/1 scanner replaces the existing 2250, and can double its reading speeds. A single line document with a combination of OCR-B and E13B fonts can be processed at 10,000 to 12,000 an hour on the 2250, and at 25,000 to 29,000 an hour on the 2280/1.

Prices start at £150,000. The scanner can be expanded to connect with key-to-disc equipment to provide a mixed media system.

BRYCE . . . "Hopelers" to stop the OCR scanner and key in corrections.

UK electronic mail to link with US, Canada

by Donald Kennett

LINKS to the US and Canada will be added next month to the UK's national electronic mail service launched last week by British Telecom.

The service, developed by US company Dialcom, will be run by Telecom Gold (formerly BT Gold), a contracting company set up for the purpose with BT's backing but owned by City businessmen. It works by providing personal mailboxes on a central computer through which users can exchange messages and hold files.

Users call the central system via the public telephone network or through BT's SwitchStream 1 packet switched network. Links to North America will be established next month when SwitchStream 1 is connected to the international packet switched service IPSS. Messages will then be transferred between Dialcom centres in the three countries.

Managing director John Morris, who came from BT, says the service will be marketed initially as an internal facility for companies. He thinks companies will start by trying it out with 20 to 50 mailboxes and expand their usage substantially as applications emerge.

By 1985 he expects between 35,000 and 180,000 mailboxes to be in use.

Initial users, which have a total of 200 mailboxes, include Philips Business Systems, the Health and Safety Executive, the Association of European Machine Tool Merchants, Westinghouse Electric Europe and Shell UK.

So far £1 million has been spent on installing the service, which uses Prime 750 minis and software from Dialcom in the US. A royalty is paid to Dialcom on revenues from operating the service and selling the software, which is being re-written in Fortran 77 to enlarge its market.

Charges are 10.5 pence per minute for connect time (on top of the telephone call) and 20p a month per two Kbytes of storage. There are discounts for off-peak and bulk usage.

Interworking with the telex network is due to be added soon. By the summer, a database management package should be available and links will be implemented to BT's radio paging service to announce the arrival of express messages in users' mailboxes.

Links will also be set up to the re-named Telemessage overnight telegram service and to a number of remote multiplexers which will extend the area in which access is by local telephone call.

In autumn a link will be established to Prestel's Gateway, so that messages can be sent and retrieved using viewdata terminals. Next winter it will be possible to interwork with the teletex "super-telex" network.

Morris believes Dialcom will appeal to companies looking to boost office productivity. While salaries have risen dramatically, he points out, productivity in offices has risen only 3% to 4% and investment per worker is way below shopfloor levels. Managers typically spend 70% of their time communicating and Dialcom offers an opportunity to reduce the flow of paper.

For mobile staff the service means that their filing cabinets are as close as the nearest telephone and terminal.

Another Unix machine to arrive in UK soon

by Robert Parry

CONTINUING the move towards 16-bit business computers built around the Motorola 68000 microprocessor and the Unix operating system, Bristol distributor Wilkes Computer is to offer multi-user versions of a new US machine, the Wicat 150.

Wilkes, though not an appointed sole distributor, is the only company shipping Wicat systems into the UK and since November has delivered seven single-user machines. True to its own strenaths and the original direction of Utah-based Wicat – the World Institute of Computer Aided Teaching – these have gone to research and educational establishments.

The two multi-user systems, supporting three or six users, will be available from May, when Wilkes should have systems in its hands. Like the present Wicat 150, the 150/3 and 150/6 will be housed in a single unit integrating CPU, main memory, hard and floppy drives and screen.

Main memory will be expanded from the 256 Kbyte minimum now available, and the bus structure and memory management will be different in the multi-user systems.

Software released in May will add CP/M Emulator and a Unix look-alike to Wicat's proprietary MCS operating system. Languages to be added to the Fortran already offered include Pascal, Assembler and C for May. By June, a "real" Unix implementation will be available with Western Electric's Unix version 7.

Application software is coming over from Wicat in the US and Wilkes is converting software from DEC systems it sells.

Compec Europe trips

by David Craver

SPECIAL travel and hotel arrangements are being made for exhibitors and visitors who plan to attend Compec Europe. The exhibition, which runs from May 4-6 in Brussels, is Computer Weekly's Continental version of its successful Olympia-based show.

IPC Exhibitions, which is organising the event, has appointed Commercial Trade Travel as the official UK travel agents for Compec Europe.

For further information on special trips contact Commercial Trade Travel, Carlisle House, 8 Southampton Row, London WC1, tel: 01-405 5469/8666. Telex: 21792/949.

Transatlantic typesetting tie-up

by Donald Kennett

A LONDON printer has solved its problems of delay and security in sending documents across the Atlantic by setting up a transatlantic typesetting link with its New York trading partner.

Managing director John Peters says the link will enable his company, Williams Lea, to co-operate closely on international deals with the minimum of delay and much better security.

The company has worked with the US-based printer Chas P. Young for eight years and courier services have been used to carry the bromide plates between them up to three times a month, compared with the six or seven domestic jobs a day it does.

Williams Lea was the first printer of the Radio Times in the 1920s and it later specialised in corporate financial documents such as loan agreements, bond issues and prospectuses.

Recent flotations with which it was involved include Memec and Amersham International.

Despite the current low frequency of contact, Peters says the new link will make it worthwhile to extend the network further afield, where security and delay problems are also a major obstacle. The first extensions will be to Chas P. Young's sister companies in the Ticor printing group in five other US cities.

Other co-operative arrangements will then be negotiated with companies in Hong Kong, Australia, Canada and Japan.

The typesetting machine is controlled by a 96-Kbyte Data General Nova mini and documents are buffered by an Interface Superbrain microcomputer with a 1.3 Mbyte floppy disc store, before being transmitted, via a Codex 4,800 bit-per-second modem over a dialled connection.

The software for the system was developed by BOC subsidiary Software Sciences.

POSTLETHWAITE . . . . Selling CAD/CAM systems on a weekly basis.

Intergraph brings down CAD/CAM costs

by David Craver

ACTIVITY at the low-end of the computer aided design and manufacture market continues. The latest release from Intergraph, one of the top four suppliers of turnkey systems, will move the sale of its systems "from a monthly to a weekly basis".

In the two years that the US company has been operating in the UK it has sold some 30 systems worth a total of £10 million – or an average of over £300,000 a system. But the shift is being made to lower cost systems to take advantage of the growth area in CAD/CAM – equipment with two to four workstations.

At the end of last year, Intergraph released a four workstation model priced at £125,000. It now has a two workstation model starting at £78,000 which managing director Trevor Postlethwaite says has the same design potential as a large Digital Equipment VAX system.

The new system is geared towards three markets – architects, mechanical design, and electrical design – and, says Postlethwaite, will enable users "to get away from computer oriented systems to application oriented systems".

The new product, the Innovator, is based on DEC LSI-11/23 32-bit systems.

It comes with a one Mbyte central processor, a graphics workstation, and 84 million bytes of disc storage.

MICRO NEWS

by Robert Parry

CAD package 'reduces VLSI circuit design and production time tenfold'

A TEN-FOLD saving in design and production cycles of VLSI circuit design is promised by Calma, the Santa Clara-based computer aided design company. The new Sticks CAD software package, shown running for the first time last week, uses symbolic layout – which makes up circuit designs through a hierarchy of building blocks – and automates device spacing and design rule checking.

According to Sue Scheidler, product manager for Sticks, it is "real join-up-the-dots stuff that anyone can do", with the complex aspects of spacing circuits and checking for violations of the fabrication process design rules hidden from the user.

The designer sets up a library of primitive symbols to represent more complex geometries and builds up circuit modules from them. The appropriate spacing and checking of these symbolic layouts is handled by the spacer program, which runs in the background while other symbolic layouts or other tasks are going on.

"Forty-five per cent of designers' time is spent counting grids on mylar or screens," says Scheidler of conventional design systems. "Sticks eliminates that."

Further productivity increases come from the "attaching" feature, which automatically connects wires when they touch or come close to wires of similar materials in real time.

Design rule checking is not done interactively and Scheidler feels that real time design rule checking is more trouble than it is worth. Designers want to get on with laying out the symbols, making adjustments for violations later, rather than having to sort them out before continuing with the basic layout, she says.

Scheidler was a chip designer for seveo years before joining Calma, having worked for Mostek and Texas Instrumeots, where she designed the first Speak-and-Spell chips.

Automated chip layouts tend to be less dense than those done by hand, but Calma claims to contain the loss of density to within 10%. Scheidler says that using Sticks she has been able to produce layouts only 2% bigger than similar circuits she has laid out by hand.

The Sticks software joins two other systems for CAD of microelectronics: Chips, an interactive graphics system for VLSI design and Cards, for designing and producing printed circuit boards.

They run oo existing Calma GDS II hardware, and the spacer in Sticks will be supported oo VAX machines.

SCHEDLER . . . "Join-up-the-dots stuff that anyone can do."

CMOS deal

A FIVE-YEAR technology exchange deal betweeo Intel, Intersil and General Electric has been agreed covering CMOS microprocessors and custom products.

Intel will provide process and design information on its high density CMOS technology, CHMOS, to allow Intersil to manufacture its 80C51 single-chip microcomputer and custom products from General Electric.

New market

BRITISH microcomputer manufacturer Rair has moved into the plug compatible market for microcomputer systems with an add-oo hard disc drive for the Xerox 820 personal computer.

The 505 offers five Mbytes of Winchester disc, giving an increase io storage capacity of 20 times and a speed increase to 10 times that of the standard Xerox floppy drive.

Alpha dealer

FIRST Scottish dealer for the Alpha Micro range of 16-bit business microcomputers has been appointed. Systemshare, computer systems and services unit within Northern Engineering Industries, will serve Scotland and North-east England.

It will supply the full range of floppy and hard disc based systems, applications software, and Alpha's new products.

Japan set to spend $1,000 million on production of semis this year

JAPANESE investment in plant and equipment for semiconductor production hit $1,000 million in 1981, a fifth of annual sales value for the top 20 manufacturers. And, according to a report from Mackintosh*, these companies are ready to spend the same again this year.

The money is going on setting up production lines for VLSI devices such as the 64K and 256K dynamic RAMs being sampled or already coming into full-scale production.

The report estimates, for example, that a line producing one million 64K memory chips a month would cost about $37m.

The largest proportion of revenue spent on production capacity – not including any R&D expenditure – was Oki's 62%, valued at $63 million. Oki is the 11th largest manufacturer, the report notes, a long way behind market leaders NEC, Toshiba and Hitachi.

It is not only the Japanese who are investing in semiconductor production capability in Japan. US companies Intel and Motorola are expected to join Texas Instruments, so far the only foreign manufacturer in Japan, and bring full production from 1983, the report says.

According to the report, output production of ICs in Japan is to grow at 12% per year from 1981 to 1986, compared to the average 29% per year between 1976 and 1981.

* Semiconductor/Microelectronics Industry in Japan, £295. Mackintosh Publications Ltd, PO Box 28, Luton, LU1 3JS. Tel: (0582) 417438.

SOFTWARE FILE

Flood of software for 68000

A DELUGE of application software for Motorola's 68000 microprocessors is likely in June, when Digital Research opens the floodgates with a CP/M operating system for the 16-bit device.

The CP/M system has become standard for 8-bit micros, and a CP/M-86 version has been developed to run on Intel 8086 16-bit machines, so a vast quantity of CP/M compatible software already exists.

Digital Research has now signed an agreement with Hitachi, one of five second sources of the 68000 microprocessor, to develop an operating system and several application languages. This will include an implementation of Pascal/MT+.

"Our policy is first to get the best commercial languages on, and then to concentrate on productivity aids," said Gordon Eubanks, vice-president of Digital Research Language Division.

A recently signed agreement with software house Micro Focus has given Digital Research rights to sell CIS Cobol, the first full implementation of Cobol for microcomputers. This means that all the major languages are available for CP/M, including CBasic, PL/1, Pascal, and, shortly, Fortran.

"We consider that we now have the optimum arrangement which serves both parties best," said Eubanks. "The beauty of it is that they have our sales force and can get on with developing more productivity aids. Both companies feel that productivity is a major issue."

EUBANKS . . . First, the best commercial languages.

Pharmacists' system triggers NewBrain sales

by Maggie McLening

RECOVERED from losing the plum contract for the BBC's computer education series, the NewBrain microcomputer has bounced back with another major contract.

Widely expected to be the choice for the television series, the NewBrain was sold by its developers Newbury Laboratories to Grundy Business Systems, who then saw the coveted contract go to the Acorn.

Now, however, a system for pharmacists written by Leasco Software has triggered off sales of 2,000 machines and installations are running at 60 per week, according to Leasco.

The system to generate this success is called Link, and has been developed for Vestric, the largest pharmaceutical retailer in Europe, and part of the Glaxo Group.

It is designed to link Vestric with its customers, pharmacists located all over the country, and to speed up and clarify the drug ordering process while making it more cost-effective.

There are currently four levels of application, and it is Level 1 that is being implemented now.

The customer dials up one of the 30 regional Vestric branches, which are equipped with ICL 7502 terminals, and orders are then digitally transmitted over asynchronous line using a specially developed bi-directional protocol. Chains of chemist shops are given the option of channelling their requests through a Zilog micro to keep a single inventory.

Details of drugs required are then sent to Vestric's three ICL 2960 mainframes at Speke, which respond immediately with acknowledgements or error messages.

Level 2 will extend the system to do prescription labelling, and Level 3 uses expanded disc memory to create individual patient records so that the pharmacist can check on dosage. Point of sale terminals can be added to the system at Level 4 to include over-the-counter sales.

"We are also hoping for a future link with Meditel, the closed user medical group on Prestel," commented Rex Ingram, manager of Leasco's micro applications group.

The importance of the labelling system was stressed by Mike Dunk, special projects manager for Vestric.

"Consistency in drug codes is vital in the pharmaceutical industry, and the Link system can be adapted for either PIP or EAN coding, which are universally accepted," he said.

Link was shown at the Arab Health Exhibition held recently in Jeddah, and generated a great deal of interest, according to Ingram. Plans are under way to provide a labelling system that shows drug and dosage details in the screen, then prints out labels in Arabic.

The system links the retailer with pharmacists all over the country.

COMPANY NEWS

Group to aid technology in small firms

by Kevan Pearson

A MAJOR drive to provide new technology and management skills for new companies was unveiled in London last week. Worldtech Ventures, a consortium of five large companies including US computer company Control Data, will provide technology transfers and management, financial and marketing consultancy to new or small businesses in the UK.

A major thread in the venture will be Control Data's experience of similar projects in the US, and its database of technology which holds 20,000 items of information about techniques and technologies, which will be available to the UK venture.

The company is targeting its efforts initially at the worst hit areas of the UK, the North-east, the North-west, parts of Scotland and Wales.

The company will not act as a venture fund, says managing director Jack Ward, a former director of Control Data UK, though it may invest in individual projects. It will provide advice and consultancy services linking entrepreneurs with essential technology, and finance, from both private and public sources, he says.

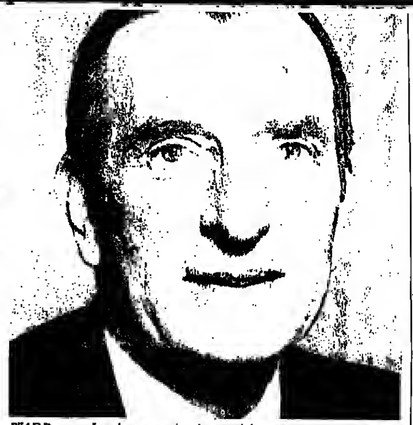
Its role will be advisory, and its revenues will come largely from consulting fees, and from the transfer and licensing of technology from other centres.

Control Data will provide the technological input, and the other four members, British Steel Corporation (Industry), Pilkington Brothers, Co-operative Bank, and Sun Life Assurance will provide the other support services new businesses are likely to need.

Ward emphasised that Worldtech is looking for active partnerships with local authorities.

The company claims to be looking for longer time scales on new enterprises than has hitherto been possible. Typical time scales will be between five and seven years, during which the company would expect to have been instrumental in setting up about 50 companies on a local basis, with about 2,000 new jobs, says Ward.

Each of the partners has contributed £200,000 to the running costs of Worldtech, over the next five years.



WARD . . . Local co-operation is essential.

Olivetti 'leads WP market in Europe'

by Kevan Pearson

THE European word processing market is being dominated by the Italian company Olivetti, which leads in terms of installed systems in seven countries including the UK, France and West Germany, according to a recent report by word processing specialist Keith Wharton Consultants of Richmond, Surrey.

This represents a significant turn around in the fortunes of the company, which only four years ago reported losses of almost £38 million (lire 88,000,000,000). Its profits for 1980 were over £20 million.

Competition in Europe comes from AES, Philips, Rank Xerox, Wang and Wordplex. IBM has yet to make a significant showing in Europe with the Displaywriter. Its performance in the UK is better, with about 6% of the installed word processors, compared to over 25% for Olivetti, says the report.

Significantly, Olivetti operates at the lower end of the standalone market where prices range from just over £3,000 to about £10,000. Displaywriter falls into the middle of this range for a fully configured system. Olivetti also makes heavy use of retailers and dealers, rather than large direct sales forces like IBM.

The report defines a word processor as a text processing machine with some form of screen-based display, so it includes thin window systems capable of displaying one line of text, and partial page systems with up to 24 lines as well as full page systems. It excludes even the most sophisticated memory typewriter.

It also includes shared resources systems like Wang's VS system, capable of handling both data and text processing.

The total installed base of word processors was just under 18,000 at the end of 1981, a rise of almost 5,000 systems over 1980.

Thin window and partial page systems each have about 35% of the market, and full page systems represent about 18%.

Keith Wharton, who set up the consultancy, reckons that the ratio of about four to one is right for the split between the low cost systems and those with a full page display.

UK word processor sales soar for AES

by David Craver

THE UK is the fastest growing market for the Canadian word processor company AES which has reported sharp increases in both sales and profits in its 1981 financial year.

Worldwide sales rose 44% to $173 million and net profits soared 60% to $7.5 million compared to the previous year.

AES chief executive John Leng said the success of the two new word processors released in the second half of last year, the Alpha-plus and Superplus IV, had created a strong order backlog. As a result, he said, "we expect to maintain our rate of growth at least through the next six months."

Production capacity will be doubled in 1982, Leng said, and this would help to maintain the company's claim of being one of the world's three largest manufacturers of word processing equipment.

UK sales jumped by 66% in 1981 and were approaching £8 million.

SOFTWARE BRIEF

Management package from I.P. Sharp

PROJECT management package Sharp Network Analysis for Projects (Snap) is to be launched in North America and Canada.

Written in Sharp APL, Snap is to be demonstrated by Ken Chakalwate of I.P. Sharp Associates in Vancouver, Calgary, Toronto and Ottawa.

Basic aids

THREE aids for programmers working in Microsoft Basic have been developed by Torchgate, a South London-based software consultancy. They are Spacesaver, to reduce program size and optimise disc storage, a debugging aid called Find, and Com-Load, a routine to allow the running of CP/M Com files direct from the interpreter.

Available individually for £24.95 each, the modules may also be bought collectively as the Workmate package for £49.95.

Fixed price

FIXED price service packages to cover programming support and hardware purchase are being offered to customers of NCR Data Centres.

Monthly fee is based on declared work volumes.

Viewdata plan

VIEWDATA software is being developed by Rediffusion business specialists John Lane Systems, of Petersfield in Hampshire.

Having recently launched a wide range of financial and tipping packages for the R1800/30 and R850 systems, the company now reports "great interest" in the viewdata system.

Members' store

CONTINUING the trend for in-house microcomputers backed up by bureau services, a subsidiary of CMG Computer Management Group, CMG West End, has launched a membership record system for professional bodies.

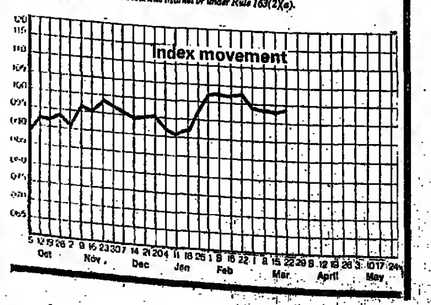
Called Microform, the system uses a database held at CMG's main data centre to store member details.

CW SHARES TABLE

Date 26/3/82 Index: 96.51 Change +0.99

Pence 1982 High	Pence 1982 Low	London Stock Exchange Stock	Price	Chge	$ 1982 High	$ 1982 Low	US Stock	Price	Chge
192	151	ACT (Ass Comm) (28p)	180	- 2	20½	14¾	Apple Inc	17½	+ 3½
176	160	BOC Int (125p)	167	+ 2	25½	21¾	Auto Data Pro	29½	+ 1½
27	18	B Sys Gard (95p)	19	- 1	35½	31	Burroughs	34¾	+ 1½
157	131	Chubb (20p)	137	- 2	48½	36¾	Commodore	44½	+ 2½
34	22	Cole Cross (25p)	32	+ 1	18¼	9¾	Comp Auto	9½	- ½
250	220	C.A.S.E. (20p)	250	+ 1	11	7½	Comp Sciences	10½	- ½
270	240	De La Rue (25p)	250	-	16½	12¼	Computer	15½	-
250	208	Extel (25p)	270	- 5	30½	20¼	Control Data	27½	+ 2½
473	400	Fenner (25p)	450	+ 2	37	27	Cray Research	27¾	+ ¾
847	603	GEC (75p)	810	- 18	63½	29¾	Data General	34½	-
31	21	G. (25p)	46	+ 1	48½	20½	Datapoint	24½	+ 1½
47	41	Calculators (10p)	49	+ 1	20½	17¾	Digital Prod	20¼	+ 1½
277	215	Lon Int (10p)	267	+ 17	27½	23½	Disappointments	26¼	+ 3½
273	218	Lon Sec (10p)	270	+ 2	27½	23½	Dome & Black	25½	- ½
275	215	McDonald (25p)	220	- 4	8½	5¾	Dole Data Sys	7½	- ½
425½	375½	Minet (25p)	425	- 2	31½	23¾	Don Automation	4½	- ½
313	285	Norcros (25p)	310	- 2	30½	20¼	Harris	30	+ ¼
106	44	Philips & Rand (25p)	61½	- 6½	43½	29¾	Hewlett-Packard	52	- ¾
399	340	Philips Lamp (£10)	410	-	78	58	Honeywell	68¾	+ 1½
57	42	Pressac (10p)	55	+ 2	35½	25½	Intel	32½	+ 1½
420	363	Quest Auto (10p)	410	- 5	60¼	37	IBM	58½	+ 1½
214	171	Reed Elect (25p)	212	- 5	55	40¾	Litton Ind	48	- 1
428	379	Reckitt (25p)	428	+ 7	12½	10	MCR (Mohawk D)	11½	- 1
90	76	Thorn EMI (25p)	85	+ 2	23	18	MSA (Magnetic Sci)	-	-
		UCB 1 (50p)	78	- 5	13½	10	Magnetic Assist	10½	- 1½
		OTHER MARKETS*			8¾	5¾	Modtech	7½	- 1½
50	38	Bos Comp (10p)			8½	6½	Motorola	67¾	+ 2½
347	118	Comp Sec (£1)	85	+ 5	25	18½	National Semi	25	- ½
180	118½	Dataflow (£1)	418	-	50½	40½	NCR	41½	- ½
19½	7	Hartx (1½)	18½	- 5	22¾	15¾	Perkin-Elmer	19¾	+ 1½
108	48	John S Nelson (10p)	128½	- 5½	35½	20¼	Prime	28¾	-
110	78	Sun Data (10p)	90	-	34	27¾	Raytheon	30½	+ 2½
176	138	Sec Comp (10p)	150	+ 5	24½	21½	Recoton	22½	- ½
108	104	Tridom Int (10p)	104	-	27½	21½	Sperry Corp	27½	- ½
96	86	Synd Dom (5p)	86	-	27½	21¾	Storage Tech	27¾	-
		US Stocks			35	25	Tandem	34½	+ ¾
29½	20	Amdahl	30¾	+ ¾	27½	19½	Tandy	27½	+ 1½
					27½	19½	Texas Inst	31¾	- ¾
					27½	19½	Wyse Inc	21½	- ½
					35¾	27¼	Wang Lab B	29½	+ ½
					9	4½	Wyly	8	+ ½

Table shows the closing prices of The London Stock Exchange on Thursday and in America on Wednesday. The share index is based on the prices of the UK companies in the table. Highs and Lows have been adjusted where necessary.
** Shares traded on the Unlisted Securities Market or under Rule 163(2)(a).*



HUMAN TOUCH

Stepping through the screen

Cliff Dilloway is an independent consultant specialising in accounting software, taxation and payroll. This weekly column will try to suggest how computers can be made to work better with people, rather than the other way around.

A SCREEN-FULL of data is usually entered by a process best described as stepping through the screen. The cursor moves from field to field as the data is entered.

The workload imposed in the operator's brain by this stepping through the screen process is considerable – the eyes have to move from a document or other data source, to the screen and probably back again. At some stage the keyboard receives attention as the eyes search out the keys.

●

This constant searching is probably more fatiguing on the eyes than that from the luminescence of the screen.

Fatigue induces errors, and should be avoided where possible. Good form design goes without saying. The same sequence of fields on the form and on the screen is common sense. The keyboard layout we are stuck with – it might theoretically be possible to improve the keyboard layout, but no-one is prepared to be the first to change.

That leaves us with the screen as about the only area where a reduction in the fatigue of searching can be reduced to zero. All input can be to a single point of eye contact, say at the bottom centre of the screen.

At that bottom centre point the prompts are presented and the data fields entered. On entry, the data may be transferred by the program to its correct position on the screen while the next prompt is presented.

●

The operator has the screen full if it is needed, though entries are not made all over the place but at a constant position.

A blinking cursor naturally attracts the eye which is very sensitive to movement just outside its point of focus. But natural attraction does not mean without fatigue. The operator who has to search the screen several thousand times a day is going to be more tired than the operator who works automatically between one point on the screen and the documents.

Cliff Dilloway

SYSTEMS THOUGHTS

Initial problems in the adoption of standards

Alwyn Jones is senior tutor in business systems analysis at City University in London, and acts as a consultant in the public and private sector. His special interest is in the application of systems ideas to the practice of systems analysis and design.

STANDARDS for the interchange of data is a subject I touched upon some months ago, and in January Alan Simpson added his voice to the growing chorus in favour of standards in general.

He urged that the DP manager should be relieved that so much activity is now taking place on his behalf, but added a justified note of caution about the apparent proliferation of bodies and committees involved.

It is indeed quite likely that a conscientious DPM would be aware that his department's work is affected by the published standards of several bodies at one and the same time.

In the very next edition Frank Taylor reported on the proposed new standard from the International Standards Organisation (ISO) for the specification of Open Systems Interconnection (OSI).

(Is there perhaps a need for standard rules on the adoption of mnemonics?)

My earlier column was really about a British (BSI) sponsored standard concerning the control of Data for Interchange at the Application Level (DIAL), and talking about interconnections I forgive you for wondering whether there might not be some between OSI and DIAL. (Yes, I'll wait while you look those up again.)

All right now? No, of course not, since you now have none of the documents before you that will enable you to understand what either of these standards is about. Well, let's look at excerpts from the introductory material to both OSI and DIAL draft proposals:

● OSI is a concept for the development of standards so that any computer, terminal or peripheral may be connected to any other in order to exchange meaningful information. Each sender need not know the technical characteristics of the recipient, only that he observes OSI standards.

● The draft for DIAL describes a general purpose language for the interchange of machine-readable data with the minimum of negotiation or agreement between interchange parties . . . The language covers only the data. It excludes all commands and protocols required to effect the transfer of the data and the activation of programs to process this data.

Putting it into the crude terms of my own understanding, while OSI represents the wider scale of connecting any system to any other system, DIAL can be seen as occupying the role of a kind of data translation tool. To achieve its aim OSI must define an architectural structure or model which is basically a layering or stratification of protocols. DIAL, to achieve its aim, must define a language structure.

The International Standards Organisation (the ISO responsible for OSI) is a body comprising representatives of national standards organisations from all parts of the globe. The UK's body is BSI, the British Standards Institution, which is itself a complex conglomeration of committees upon which sit representatives of organisations which are deemed to have a contributory interest in the appropriate subject area.

For ease of reference these committees have coded titles. A group code identifies the general area of concern and serial numeric codes are then attached to identify more detailed subject interests. The group code for the committees concerned with OSI and DIAL is . . . wait for it . . . OIS, which stands for Office and Information Standards! (By the way, there are 31 = 6 ways arranging three symbols, so we're only half way there yet).

It is worth emphasising that while OSI has been developed to the highest organisational standards level DIAL is a product of the UK national level only. There is naturally a strong hope that DIAL, if well supported at home, will graduate to international status in due course. It has to be borne in mind, though, that there are other less well-developed local languages of this kind in other countries that would have to be massaged into DIAL shape to achieve this.

Meanwhile you can do your bit for the cause by supporting the forthcoming seminar on DIAL in Birmingham on May 19 which is being organised by BSI*.

And finally, I ought now to declare my own affiliation in all this – and that is that I sit on the BSI Technical Committee OIS/14, The Representation of Data Elements, as a representative of the BCS (and I leave you to decode that abbreviation for yourselves).

Alwyn Jones

* Enquiries about the DIAL Seminar should be directed to Gordon Graham, head of promotion services, BSI, Maylands Avenue, Hemel Hempstead HP2 4SQ, mentioning this source of your awareness. Or can phone him on Hemel Hempstead 3111.

FOCUS

Going paperless

PAPER manufacturers, forest owners and even lumberjacks could be feeling edgy about the promotion of the paperless office. Teletext, electronic mail, intelligent VDU terminals and word processing machines are all conspiring to abolish the basic ingredient of office life.

IBM, for one, has well and truly latched on to the paperless office theme. Its latest promotion brochure features an office manager overwhelmed by stacks of paper and files. The general theme is that an IBM small computer can solve business problems and control paper flow.

The computer company could also be hoping that by clearing some space on the executive's desk, room will be found for the all-important terminal. However, any cutback in computer paper usage is probably compensated by the current levels of lavish industry brochures. Selling advanced level electronic technology makes heavy use of paper resources.

Digital Equipment is similarly directing lavish brochures towards the small businessman. Its publication, The Easy Way to Buy a Small Business Computer, makes no claim on paper saving, possibly because its typical business configuration includes a high-speed line printer, a device not noted for reducing paper flows.

Both companies – along with most other small system suppliers – concentrate on the ease of selection. But the selection stakes are a piece of datacake compared to that of implementation.

The selection enterprise can be the most pleasing aspect of the computer project. It is the time when vendor management put on a personal appearance – an event not likely to be repeated once the order has been signed. It is also the time when prospects are invited behind the exhibition stands where hard drinks are more in evidence than hardware.

And it is the time when the prospective user is offered the opportunity to travel. Depending on the size of the projected configuration, visits are organised to a very local user, or restaurant, golf club, or a nearby sales centre.

For large system users, it is not unknown for trips to be arranged across country or even continents. Most large suppliers have a special reception unit responsible for conducting visitors round impressive clean rooms, despatch areas and R&D departments. After a works lunch, the visitor finds himself being given a tour of the region and later the delights of the local nightspots.

DP reality arrives on the installation scene shortly after the contract has been signed, sealed and delivered. Delivery now becomes a major issue. Either the machine will be available next week with software to follow in the next quarter, or delivery will be spread over several months with associated timescales of software and peripherals.

At this time, the new user will discover the essential requirement for a dedicated environment. Even the basic word processor, especially when linked to a printer, needs careful siting if the office manager is not to be disturbed or the tea-waggon diverted.

Next on the DP discovery front come the problems of file creation, operator training, parallel running and management control; also the allocation of user priorities. In between times, there are the pressing problems of stationery supplies – will the existing stock last out until the computer system takes over, can the new computer requirements be ordered off the system charts or should caution prevail and ordering be held until the system is ready for testing?

With government Ministers urging companies to Adopt IT, an increasing number of users will be accepting the challenge. Selecting the new system may be part of the challenge, but getting the DP show on the road will be an even greater challenge.

Alan Simpson

DOWNTIME

Affluence of incohol

"WHEN the wine is in, the wit is out," wrote a dry philosopher some centuries ago. Not so, say many in the computer industry. Last week I reported how an Irish programmer benefits from a strategic pint pursued by a drop of Jameisons.

Since then another programmer, who shall be nameless, has adapted the above apborism for his own metabolism: "When the wine was in yesterday, the wit is in today."

The morning after a binge, he tells me, his head is spinning with ideas.

Why not drop me a line, c/o Computer Weekly, and tell me how alcohol affects your performance at work.

The best reply will win an inch of space in this column. Second best, a foot.

The biter bit

THE offices of the satirical fortnightly Private Eye are often mistaken for a brothel, according to what we hacks call informed sources. And a mole murmurs that the Eye's editor Richard Ingrams is incensed by the invidious innuendo.

Excuse me while I reach for a handkerchief. Meanwhile let us ponder that even the thickest skinned in the business has a nerve centre that can be exposed by a well-aimed bullet.

Mr Ingrams is 64.

These foolish things

COMPUTER WEEKLY is far too old and wise a journal to be lured into April foolishness.

But I will tell you of a prank played on a friend of mine one April 1.

He was sent a parcel containing a black sphere two inches in diameter and the weight of a baby's fist.

Writing it off as a dull piece of April tomfoolery he thought nothing more of it, and placed it on a table.

But later that day he came to pick it up and found that it had significantly gained in weight. Later still it became an effort to lift up the sphere at all.

Curiosity yielded to concern and then to a panic as images of this sphere collapsing first through the table and then the floor were evoked. Before it was too late – my friend decided to fling the thing into the Thames.

Which was a pity because he never did discover the secret of the sphere which grew under its own surface.

Any ideas? Because otherwise I shall simply conclude that the thing was a Black Hole and leave it at that. And we all know that a Black Hole is greater than the sum of its particles.

Every picture tells a story

IN order to assess the personality of new members, Dateline Computer Dating has incorporated a picture test into its questionnaire. Applicants are invited to compile six little pictures from shapes provided, and the way they do this is supposed to indicate not artistic ability, but their emotional temperature.

This innovation is clearly the grandchild of the ink blot test, as in the following:

Psychiatrist: What does this ink blot remind you of?

Patient: A kangaroo on the back of a hippopotamus.

Psychiatrist: OK, what does this next blot remind you of?

Potient: A camel riding a horse.

Psychiatrist: You've got problems, chum. Bestiality's your disease.

Patient: You're the one with problems, doctor. Showing me those dirty pictures.

Now it sounds as if Dateline could be inviting prospective members, no doubt with minds clogged by thoughts of romance and sex, to go one better and reconstruct their own dirty pictures!

Chris

Bugs in the ICL system

AS the frightening spectre of 1984 looms ever nearer, it may reassure you to know that at least one British company is planning ahead.

ICL has had installed for some time a telephone monitoring system known as Tiger, which records details of calls made from each extension at its offices. Periodically, the data tape written by the system is processed at one of the company's data centres, and a report of who called whom, and when, is presented to the management.

Reliable sources within ICL inform me that, on at least one occasion recently, the system has been used to check on any calls made to the computer Press, in an attempt to stop any unofficial disclosure of information.

Chris

Not so dusty answer

I KNOW I go on a bit about LAMSAC and Ross, its system to help local authorities save money on refuse collection. But the fact is it's the best refuse simulation system around and has saved a lot of public money.

However, it doesn't always work. I hear that one authority in the South-west put its figures into Ross to see if savings could be made.

Ross recommended an extra four dustcarts and 10 additional staff.

Who says that computers don't create jobs?

10 YEARS AGO

From Computer Weekly of March 30, 1972

THE government announced plans to establish a central computer agency as part of the Civil Service Department. It would have a staff of about 600 and would procure government computers, handling a budget of about £30 million . . . Memorex, known for disc packs and plug compatible peripherals, entered the mainframe business with the introduction of two commercial data processing systems, the IBM-compatible MRX/40 and 50 . . . In a bid to win a larger share of the growing small computer market, Computer Technology reduced prices of its equipment by about 20% and agreed in principle to supply ICL with front end computers . . . A new company, Packaging Programs Ltd., was formed by management consultants McLintock Mann and Whinney Murray to market its proprietary software . . . In a deal worth over £400,000 International Publishing Corp. sold its International Data Highway subsidiary to CRC Information Systems . . . IBM suffered a significant defeat in a San Francisco court, where the company was accused of anti-trust violations by Advanced Memory Systems. IBM agreed not to refuse to attempt to service and maintain IBM 2030 processor units with Advanced Memory equipment.

ComputerWeekly

Quadrant House, The Quadrant, Sutton, Surrey SM2 5AS

Thursday, April 1, 1982

Let's back the visionaries

THE proposal for a national wideband cable network built by private industry has attracted a squall of criticism. Post Office Engineering Union leader Bryan Stanley says it could be an expensive mistake, and urges that British Telecom be closely involved. Doubts are voiced on whether enough services would spring up to use and pay for it.

Some question whether there is a need for it anyway, while others wonder what all the urgency is. There is certainly no consensus in favour of what would be a fundamental addition to the infrastructure of our nation.

The proposal for the network came from the Information Technology Advisory Panel, a board of industrial bigwigs appointed by Minister Kenneth Baker to advise the government on policy. A key element of the idea is, not surprisingly given its source, the need to prevent British Telecom dominating planning discussions. This despite the fact that it will obviously have to be involved and indeed lend (rent?) cabling ducts to the intruder.

Although the panel has great hopes of jobs being created in services which would be developed to pay for the wideband network, it has confined itself to predicting a gain of 5,000 jobs in the companies involved in setting it up. There will also be something like 2,000 jobs preserved in existing cable companies, the panel reckons.

□ □ □ □

Baker's junior Minister John Wakeham, goes further. The marriage of telecommunications and entertainment offers a logic and an economics that will do for the 20th Century what railways did for the 19th. In short, it will generate very large sums of money and unprecedented numbers of jobs, he says. An enticing prospect.

But first things first. Ideas for wired cities and global networks, carrying anything from home shopping to blue movies, have circulated spasmodically for 20 years or more. They have failed to become fact for lack of economic justification. Events are now combining to make such a justification.

The events fall under two headings: technology and demand. We have, as they say, the technology. The development and introduction of optical fibre cables was the final element. As for demand, it comes simply from the bigger and bigger market for entertainment.

More broadly, we need the new industries of information technology on which to base the growth in our national wellbeing, both because international competition in old industries is hotting up, and because the energy and natural resources on which old industries depend will simply not support indefinite growth.

The entertainment market can be served in two sorts of ways – efficiently or inefficiently. It can be served through a cumbersome network of video tape distributors holding large stocks of slow moving items in every community in the land, plus satellite television, plus broadcast television plus cinema plus space invaders at the local pub, plus many others.

Or it can be served in a way that simultaneously establishes distribution channels for other services that are too risky or only marginally profitable if provided by existing means. These include educational services, specialised information, local information and services that are enhanced by immediate interaction with their users. Following on comes home shopping, telemail and the rest.

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The objection to a dominant involvement by British Telecom is based on the fear of over-engineering the network, thus making it too expensive, and of cumbersome centralised control. The railways have suffered from some of these things, but there Wakeham's analogy ends. A national wideband network is probably more closely akin to a motorway system than a railway.

For motorways, standardisation can be dealt with in a more general way, financing and contracting can be broken down by area, and service facilities can be offered in greater variety.

Network attachments and their accesssories, (like vehicles) can be supplied on the open market by a multitude of businesses big and small, rather than by a handful of major engineering contractors.

This is already starting to happen with the telephone, though at nothing like the rate at which it could occur on a wideband network. To revert to the analogy again, the user needs an altogether different level of performance, service and comfort to travel on the motorway from that required to potter along the backroads.

Motorways were very lightly loaded in their early lives and fierce arguments raged over the wisdom of building them. We are now hearing the wideband network equivalents of "Our food gets to the shops all right now", "We should boost the railways instead", "Farmland will be wasted", "High streets will be by-passed and die" and even "There will be no pleasure in driving through the country any more".

Talk about the services likely to be available on the wideband network has been pretty general so far. Consumers of films, television repeats and minority interest programmes are expected to pay for it in the short term, so that in the longer term Picture Prestel pages can be delivered in a split second instead of eight minutes. But there will be far more services than that. There is as yet no proof, but do we need any?

□ □ □ □

Getting back to motorways again, even though there is constant traffic on them day and night do we know where it is all going? Do people really visit their grannies *every* weekend? Do so many really work at night? The motorway builders certainly never told us where everyone was supposed to travel to, and now that we take the traffic for granted we don't need to know.

No doubt there will come a time when we see the network equivalents of the speed limit coming down to a stifling 70 mph, service operators competing for franchises and appearing in Egon Ronay's guide, and users complaining that the signs are not clear enough.

Meanwhile let's back the visionaries, give the contractors a clear road, watch out for Ministers with commercial interests – and start taking driving lessons.

1984 and all that . . .

THIS week's example of the strange things people say about computers was sent in by G. A. C. Cutler of Malvern, Worcs, who wins £5.

Robots are perfect. They think out their mistakes before they happen.

Daily Mirror

LETTERS

Software copyright

BOTH Graham Ross in a letter and David Ferris in an article (CW, March 18) make it clear that useful though copyright can be for the protection of a software product they do nothing to ensure that the ideas embodied in a program are retained for the benefit of an author.

They are quite correct, of course, but might I suggest that they are both looking at today's short term situation. In the long term the loss of ideas expressed in computer programs will not be a problem.

There are two developments that are working through the computer industry. Larger small business computers are being introduced based on 16-bit chips, and 32-bit chips are not far away. The greater power and storage capacity of these chips will enable much more sophisticated software packages to be introduced.

The new software packages will require a greater financial investment to create or to copy. Stealing the ideas and knocking up your own program will inevitably produce an inferior copy.

The marketplace will soon be able to tell the difference between the original and the copy.

The second development is that much more than simple package installation support will be required for these sophisticated packages. The real need will be for ongoing support to develop the use of the package as a matter of business education. The provision of ongoing support will be more of an important business than the initial supply of the program packaged product.

These changes in the marketplace will reduce the need for copyright protection in programs to a residual right that is rarely needed to be invoked. Ideas can be purloined from today's suites of 64K programs only because they are essentially simple systems.

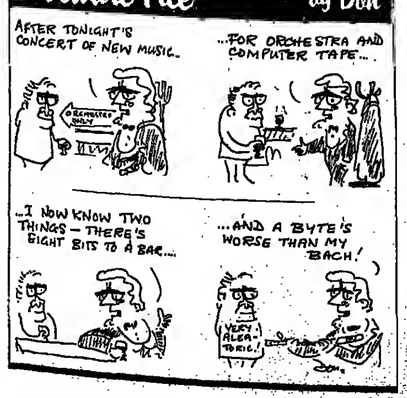
As Graham Ross puts it, "The application . . . is readily apparent on a detailed demonstration of the system." In the future software products will be resistant to attack on account of their sophistication.

Legislation, when it comes, should recognise the possibility of these developments.

C. C. DILLOWAY

Stroud, Gloucestershire.

Liveware File — by Don



Terse 'Do Nothing'

I READ with interest the letters (CW, March 18) concerning Philip Hunter's request for a "Do Nothing" statement in programming languages.

Not wishing to let the proponents of Algol 68 and Pascal steal all the glory, I would point out that C also has a "Do Nothing" statement. As is usual with C, it is both terse and rational. It looks like this:

```
;
```

As you can see, the statement body is empty – a perfectly reasonable thing for a statement which does nothing and which has no code generated for it. The semicolon is C's statement separator – rather as in PL/1 – whose presence makes this invisible nonfunctional statement legal. Of course, if you really wanted to say it out loud, you could use the C preprocessor's #define facility to create a Do Nothing statement which is visible:

```
#define NOTHING /*does nothing*/
```

You could then use it thus:

```
if (condition)
    statement;
else
    NOTHING;
```

I really can't see how this clarifies the code though. BCPL, C's grandfather, offers the following statements which solve the problem:

```
if (condition) then
    statement;
and
    test (condition) then
    statement;
    else
    statement;
```

Interesting to note that BCPL was invented in 1967 and that these constructs were inherited from CPL – BCPL's "father".

MARTYN G. WILKINSON

Maidenhead, Berks.

Cheque book printing

YOU report (CW, March 18) an interview with ICL when they said that printing complete cheque books is beyond the capabilities of the IBM 3800 laserprinter.

In the fact, the only production system for laser printing cheque books in the UK at the present time is using 3800s and was set up by ourselves to print books for the National Girobank early in 1981.

This system has carried out this contract with complete reliability since then, offering a 24 hour turn round.

Similar work is now undertaken for other banks.

E. D. ASTON

Sales Director
ContinuPrint Ltd,
Altrincham,
Cheshire.

Employee's view of DSS

I HAVE only recently become aware of the two articles about Dynamic Software Services (CW, February 18 and 25) and of the letter written by one of my former colleagues at DSS (CW, March 18).

I would like to make it clear that I share his opinions about DSS. If anything I feel he (or she) was rather lenient. Working at DSS was a very depressing experience, and I certainly wouldn't want anyone else to go through what we did.

Nowhere in either article is there a trace of doubt about the shining image DSS is trying desperately to project. Why is this so?

Name and address supplied.

Systems analysis courses

IN his Systems Thoughts (CW, March 18) Owen Hanson implies that the only systems analysis courses at MSc level are run by universities.

He should be aware that an MSc conversion course for non-computer science graduates has been running very successfully since 1977 at Leicester Polytechnic, with support from the Science and Engineering Research Council and TOPS.

The 1982/83 course is already heavily oversubscribed.

Dr D. R. HOWE

Principal lecturer
School of Mathematics Computing and Statistics,
Leicester Polytechnic,

PROGRAMMERS PAGE

Call a computer if you seek the ideal date

by Philip Hunter

COMPUTER dating agencies are often criticised for exploiting loneliness, building castles of sand for people in need of secure foundations. Some even regard them as a bit of a joke.

Nonsense, is the resounding reply of London-based Dateline Computer Dating, the first and largest computer dating agency in the UK founded in 1966.

We are simply in the business of creating fun and happiness, the staff appear to sing in chorus to a sceptical observer.

Dateline's ebullient spokeswoman Fo Fountain claims 1,000 marriages a year as evidence of success. "Exact statistics are difficult to get since we are not o marriage bureau, but we have been told of getting on for 16,000 marriages from our former clients," she says.

The programs which give hope for Dateline's 46,000 clients run in Basic Plus on a PDP-11/34 processor with 256K main memory.

The data is stored on a 160 Mbyte Winchester system running in parallel with two older 40 Mbyte drives. Recently a new suite of programs was written based on a questionnaire compiled by Dr Robert Sharpe of the Institute of Behavioural Psychology. The new programs build matches on a more flexible basis taking into consideration that unlike personalities sometimes attract.

The process of finding someone a courting companion begins by eliminating obvious non-starters.

These include the same sex, people from outside the desired area, and anyone else ruled out of court by answers to the questions dealing with the kind of person wanted.

For example, "political extremists are hard to match," says Fountain. In fact it seems there are not too many extremists on Dateline's books. For Fountain continues: "If someone wants to meet only political left wingers, we ask them to be less restrictive on other accounts."

FOUNTAIN . . . Hard to find dates for political extremists.

Having excluded the impossible, the system now has to find the probable from among the possible. So begins the character analysis, which is split into four sections from which four independent scores are accumulated.

These sections are: Personality, type of relationship wanted, lifestyle and work. The four scores are derived independently, but are then correlated according to the individual answers given.

Programming manager John Gingell explains that it gives the proverbial normal types just what they ask for – proverbial normal types. At the same time it also gives the person looking for someone with opposite characteristics what they desire.

But other people, Gingell explains, just do not know what they want, and for these the new system is flexible and puts up a catholic collection of candidates – some similar and some with complementary personalities.

Sometimes a quiet person needs a spark of excitement, but is wary of asking for it, Fountain explains. Similarly an extrovert or hyperactive type might need calming down.

Of Dateline's members 86% are under 35, but all ages are well represented. The normal membership fee is £56 for a year, but girls under 25 and men over 55 get half price, simply to balance the numbers.

"There are more men than women under 25 and more women than men over 55," Fountain explains.

She emphasises that Dateline is not just for outcasts and inadequates. "Glamorous professions are well represented. Many of our female members are air hostesses, and there are plenty of doctors and nurses who all work strange hours," she continues, giving some insight into why people might find Dateline helpful.

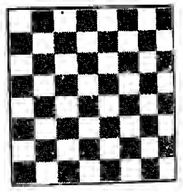
Dateline will not take anyone. Homosexuals, congenital idiots and prisoners are, for example, excluded. "These we will pass on to the relevant bodies," says Fountain.

What happens when people find no joy from Dateline? "We might ask that they remove some of the restrictions," replies Fountain. "Or if they are fat we might suggest they go on a diet."

Although Fountain admits that fat people can look elegant if they dress properly.

One final statistic: Dateline receives more post than the BBC.

Squaring up to a black and white dilemma



TAKE an eight by eight board with an equal number of black and white squares such as is used for chess or draughts, and remove two diagonally opposite corner squares. There are 62 squares left. Now take 31 dominoes each of which will cover two adjacent squares.

Is it possible to place the 31 dominoes on the 62 squares of the board such that every square is covered?

No. Because every black square is surrounded by white squares and vice-versa. Therefore since each domino covers two adjacent squares, it must cover one of each colour. It follows that the 31 dominoes would have to cover 31 black squares and 31 white squares. But as the two opposite corner squares are always the same colour, there cannot be 31 black and 31 white squares.

So it cannot be done . . .

Now, supposing all the squares on the board had been the same colour, would you still have spotted the above elegant solution?

I doubt it. In fact the problem becomes rather tedious without the simple expedient of nominating an opposite polarity to the adjacent square.

Yet the problem remains the same, having nothing to do with the colour of the squares. Soften solutions to problems are hit and miss affairs resulting from happy coincidences. But the computer does not have this ability to relate seemingly unconnected events – not even when driven by an expert system.

The domino problem was recently set to an artificially intelligent program called AURA, developed at the Argonne National Laboratory in Illinois mainly to assist in the design of microelectronic circuits.

Light work it made of it. Nine seconds it took, far less than would be needed to solve the problem by brute force trial and error.

Did the program spot the elegant solution, I wondered?

"No, it used a geometric argument," replies Larry Wos, who developed the program.

A compromise between intelligence and crunch.

Room for bit twiddlers

THERE are, writes software superstar James Martin in his new book Application Development Without Programmers, two types of programmer personality; the consultants and the bit twiddlers.

The consultants are the articulate ones with the ability to communicate with end users and to sell their wares.

The bit twiddlers, among whose number I count myself, are the awkward introverts with little desire or aptitude for talking to end users or the upper echelons of management.

Martin does not join the congregation condemning the bit twiddlers, thank goodness.

They have their place, he writes, in software houses and as systems programmers. There will always be complex technical applications beyond the scope of any application or report generator.

But dare I suggest that Martin has over-simplified the issue. That in reality every programmer has a bit of consultancy and a bit of the twiddler in him?

PUZZLER

THIS diagram illustrates a mathematical "record" that stood for many years. It shows how seven straight lines can be positioned in such a way as to outline ten separate overlapping triangles (marked here with crosses). Now, a new puzzler has been discovered which gives 11 non-overlapping triangles. Try your luck at finding it before turning to page 38 for the solution.

OP SPOT

by Andrew Thomas

WHITE . . . "All the skill's gone out of operating."

LEWIS . . . "Know any operators working flexitime?"

Eight shift leaders rotating in the opposite direction to the ops

WHAT does the word Kalamazoo mean to you? The old vaudeville standard "I got a gal in"? Or the town in Michigan where Gibson guitars are made?

It's more likely you've encountered it before on a wide range of office equipment and filing systems. Despite the American name, Kalamazoo is 100% British, originating from the first product the company marketed, the Kalamazoo loose-leaf binder.

In late 1966, the company realised that much of its product line could, and would, be superseded by DP technology, and set up its own bureau service.

The current complement of hardware comprises two Burroughs 4700s, a 3800, and a 2900. The machines are installed in two rooms at the Northfield, Birmingham site, which appear to be rather a long way apart, especially when it's raining.

This geographical separation means that two separate shifts need to be on the job simultaneously. Working a three-shift, five days a week system, how many shift leaders does this mean?

Wrong. There are eight shift leaders, rotating in the opposite direction to the operators, each of whom does two day shifts a month. One week is spent carrying out normal shift leadering, and during the second, the incumbents perform a technical support service for users.

The two rooms both have their own managers – Lou Gamon looks after Number One centre, while Number Two is in the hands of Chris Maiden.

Working alongside the computer room managers is the operations training department. Trainees entering operations start as offline operators, responsible for printing (most output is spooled from the mainframe on to tape and printed via various minis), and the reading of incoming data for the bureau services.

From there, operators attend a series of in-house courses aimed at bringing them up to senior op standard within 18 months.

In Number One centre, shift leader Ron Lewis (12 years' service) asked if I knew of any installations working a flexitime shift system. Other than the usual informal flexitime (longer lunchbreaks), I had to admit I didn't. If you know of such a thing, I would be interested to hear about it.

Wasn't he fed up with operating after all those years? "Shifts suit me," he replied, "I can see more of my kids."

Number One centre also has that rarest of beasts – an employed TOPS operator, Max Blythe.

"The TOPS course didn't really do more than give him an overview of computers," said Lewis. "It would only really help if the practical experience was on the same type of hardware we've got here."

Over in the corner sat one of the mainframes, with 3900 emblazoned across it in large characters.

"I thought you said you had a 2900?"

"It is," replied Gamon, "I think Burroughs had some delivery problems and sent us the wrong cabinet."

Over in Number Two centre, a damp reporter (it was raining), met the other day shift. "What's it like working here?"

"Excellent – well, very good anyway," replied operator Philip Jones.

"Yes, it's OK," said senior op Carol Sedgwick. "But it takes a long time to get to be a shift leader – they've all got mortgages and don't want to move on."

Although basic salary is protected when coming off shift, the loss of 20% shift allowance causes the usual inconvenience.

"It's not too bad if you leave as a senior op," said Lewis, "but as a shift leader . . ."

Steve White, shift leader at Number Two, was the only person I met who wasn't completely happy, and even then it was the state of operating in general, rather than Kalamazoo, that was the cause of his discontent.

"All the skill's gone," he said, "It's boring now except on the smaller machines, I might move into micros or minis where there's something to do.

"There's too much emphasis on qualifications. You don't need 'A' levels to operate – it's common sense."

DOing NOTHING with great effect

THE more intellectual will have noticed the discussion on other pages of this journal concerning the existence, or non-existence, of a "DO NOTHING" statement.

Why programmers are fascinated by such academic exercises is quite beyond me, but I admit to a certain interest in the subject. The programmers are, in my view approaching the problem from the wrong angle in looking for a statement which will cause a single program to do nothing.

As usual, if you want the solution, ask an operator. So I introduce the Andrew Thomas Global Do Nothing statement (pat. applied for).

Under that most noble operating system, George 3, there exists a category of work known as no-user context.

Simplistically, this is a state where users can communicate with the system without actually logging in, so any activity at this level does not have an associated jobname.

Any tasks carried out at this level are not subject to scheduling as are user jobs, and are actioned by the operating system itself.

Another feature of George is a special username, :MACROS, which is used to hold frequently-used procedures, such as sort routines. Files in :MACROS can be called direct from the operator's console simply by typing their names.

If we were – and this is, of course, only hypothetical, I don't want any of you to try it – to input a file in :MACROS containing the statement "9LABEL GO 9LABEL" and were then to call it from the console, not only would the macro not do anything. It would not do anything with such vigour and single-mindedness that every other job in the machine would do nothing in sympathy.

As no job is involved in this nefarious activity, the only way of stopping it would be to reload the entire system.

This is, of course, only a speculative exercise, and I hasten to add that I have never actually done such a thing. Well, not deliberately anyway.

Operator in distress

SIR, While reading your column in the March 4 edition of Computer Weekly, I noticed in the first paragraph your mention of an all-night Adventure session.

If this Adventure is the same one that is supplied with VM by IBM, then maybe your readers can help me.

I can't figure out how to explore the region beyond the Emerald room without a light source; also, what the hell do you do with the Spellmaker Today magazine?

My hair has fallen out, I have lost 35 stone with the worry, and my teeth are loose from constant grinding. Please help me.

I remain, in trembling expectancy,

(Name and address witheld by request)

A.T. comments: Never having been beyond the Emerald room, or having read a copy of Spellmaker Today, I am not able to provide the answers to this poor soul's problems. I suspect that the version used by myself (the ICL 1900 one) differs in many ways from the IBM product. But there must be someone out there who has boldly gone where no operator has ever gone before, who can supply the requisite solutions. This is a golden opportunity for you to help a fellow operator in distress. In these troubled times we must all stick together – so let's be having some suggestions.

PEOPLE

Apple UK names managing director

APPLE has promoted its European director of finance and administration Peter Cobb, to managing director of Apple UK. He replaces Mike Brewer, who remains with the company as an executive director.

Cobb joined Apple in 1980, after two years as European financial director for a City commodity trading company. Before that he was European controller at Intel in Brussels, a post he held for five years.

Roger Kermisch takes up Cobb's old post as director of finance and administration for Apple Computer International. He joined the company as European controller in October last year, having previously held a similar post with Memorex.

President for AMI

AMI Microsystems has appointed a new president and director, and named two vice-presidents. Bob Penn, who has been executive vice-president and chief operating officer of AMI since 1980, and an officer of the company for five years, has been elected president and chief operating officer, and a member of the board of directors.

The new vice-presidents are Bill Nicholson, who replaces Dr Raymond Wang as vice-president for microprocessors, memory and telecomms products, and Tom Woodward, who is vice-president for special products.

Nicholson has been a director of the company's telecommunications product group for five years; and Woodward, prior to his promotion was director of AMI's memory products group.

Cornelia Varney has joined Butler Cox as a consultant, to specialise in market studies and technical research. Her career has concentrated on office equipment, information services, and most recently market planning and research on Prestel with Logica, where she has spent the last eight years.

Jean-Louis Auque has been named sales director of the Cynthia OEM division of CII Honeywell-Bull. He was formerly general manager of French companies Geveke Electronique and Documentation. During his 20-year career, he has joined technical and marketing experience with IBM, Control Data and Memorex.

■ Tony Patson and Mike Shaw have joined Package Programs' recently-formed subsidiary PPL-Cyborg. Patson, previously European manager at Peterborough Data Processing, becomes support consultant for users of the PPL-Cyborg payroll and personnel systems. Shaw, formerly in sales and support at MSA, joins the company as sales executive for the North of England.

■ Jim Jones has left his position as manager, international operations with Pertec to start the European office of US-based Priam Corp, a manufacturer of Winchester disc drives. The office will be in the Reading area.

■ Robert Leach has been appointed financial controller at DCC. He was formerly finance manager at Carboly, a subsidiary of General Electric, US.

■ Constantine Serafim has joined Multicomputer as technical manager. He was formerly consultant to Compulite Systems.

CACI and BL Systems team up for service

CONSULTANCY CACI and British Leyland subsidiary BL Systems have got together to provide organisations with online application development. Called Adam, the service is built around CACI's software of the same name and aims to produce systems with the emphasis on software independence, to allow for future technological advances.

The Adam team is Colin Anderson, manager of CACI's advanced technology division; Dai Millington, services consultant at BL Systems; Philip Makinson, operations manager at BL Systems and John Tunch, who is currently involved in the provision of time sharing services using a variety of hardware and application packages, also at BL Systems.

Details on the service are available from Colin Anderson, CACI, 6th Floor, Swan Office Centre, Coventry Road, Yardley, Birmingham B25 8AD. Tel: (021) 706 8103.

■ Colin Peckett and Alan Wiltshire have been appointed to the board of Sherwood Computer Centre group. Peckett is director of the group holding company Sherwood Computer Centre Ltd, with responsibility for work undertaken through Datalnyd, of which he is a director and general manager. Wiltshire joins the board of Sherwood Insurance Administration Services and was formerly customer services manager of the company.

■ Roger Higgins has been appointed director, international sales and marketing, at Shugart. He joins from Rank Xerox, where he was manager of the information processing and facsimile business division. His new post is based in Sunnyvale, California.

■ Roger Godin has joined Computervision as director of finance and administration. He was previously with Cable and Wireless, latterly as director and chief executive of the group's European subsidiaries.

■ David Wheeler has joined MSA as systems consultant. He was previously with Thorn EMI as senior business analyst.

■ David Bunham has joined Bowthorpe Microsystems as project manager. He was previously manager at Texas Instruments' TI microcomputer group.

Finance boss at Centre-file

CENTRE-FILE, National Westminster Bank's computer bureau subsidiary, has appointed a financial director. He is Nick Scott, who has been with the company since 1975.

Scott joined Centre-file as financial accountant and was promoted to financial controller and company secretary a year later. Since 1981 he has been financial and management service controller. He is a Fellow of the Institute of Chartered Accountants.

■ Andrew Montgomery, formerly with ICL, has joined Technimar International as product marketing manager for DP products. Keith Mackeney, formerly with Beckett Mobrey, has joined as personnel manager.

■ Phil Watts has joined Abacus Electronics PLC as computer products manager. He joins the company from Rapid Recall where he was product marketing manager for microprocessors and terminals.

■ Ian Stratford has been appointed head of consultancy at Applied Research of Cambridge. He was formerly a director at Hans Barbe and Associates, a transport planning consultancy.

DIARY

APRIL 1-3
Portable software – Modular II and Small Talk. USUS (UK) conference. Lancaster University. Details Chris Sadler on 01-980 4811 ext 650.

APRIL 5-7
Control systems concept and approaches in clinical medicine. Symposium. IEE. University of Sussex. Details from the Institute of Measurement and Control, 20 Peel Street, London W8 7PD. Tel: 01-727 0083.

APRIL 5-8
Treods in online computer control systems. Fourth International Conference of IEE. Warwick University, Coventry. Details from IEE on 01-240 1871.

APRIL 6
Aggregated hospital data systems. Seminar. BCS Medical Group. Academic Centre, John Radcliffe Hospital, off Headley Way, Headington, Oxford. Details Ms D. Scott on (0277) 228470, ext 27.

APRIL 7
The increasing popularity of APL. IDPM Central London branch. Altergo Software, Imperial House, 15-19 Kingsway, London. 6.30.

Applications of computers in the Sussex Police Authority. BCS Sussex branch. Police Headquarters, Malling House, Lewes, Sussex. 7.30.

System X. BCS Chester and North Wales branch. Hadyn Rees Room, Theatr Clwyd, Mold, 7.30.

Branch AGM. IDPM Sussex branch. Room G27, Mithras House, Brighton Polytechnic, Moulsecomb, Brighton. 7.00.

APRIL 8
Talisman – the Stock Exchange settlement system. BCS Oxfordshire branch. Staff Coffee Lounge, Oxford Polytechnic. 7.45.

APRIL 13
Impact of microelectronics. BCS Dundee branch. College of Technology, Dundee. 7.30.

CONFERENCES

■ THE second international conference and exhibition on CAD/CAM, computer aided design and manufacture, is to be held in Manchester in July. Organised by Scientific and Technical Studies, the conference aims to examine new methods of teaching and training and will look at the problems of updating, retraining and acquiring skills. It will also include the future needs of industry and society. The exhibition of equipment and services will include new methods of distance learning with specific reference to suitable software. Details from Suzanne Maybew on 01-242 2481.

■ THE FIRST Annual Workshop on Interactive Computing will take as its theme CAD/CAM: Electrical Engineering Education. Organised by the Technical Committees on Design Automation and Computer Graphics of the Computer Society of the IEEE and the College CAD/CAM Consortium, it will be held in October at the University of Virginia, Charlottesville, US. A call for papers has been issued on topics including: Fundamental Principles for CAD/CAM; Ioteractive Graphics for CAD/CAM; CAD/CAM on Personal Computers; Support of Industrial Applications. Four copies of a 300-word summary should be submitted by June 1 to Dr Harlan Mills, 6600 Rockledge Drive, Bethesda, MD 20034, US. The organisers say the main aim of the workshop is to identify the advantages and the impact that CAD/CAM should have on electrical engineering.

Two in three firms have a premises problem, a Computer Weekly survey finds . . . Andrew Thomas reports

Lack of suitable sites hinders UK take-off in high technology

Where are the industrial developments required by the computer industry?

ALTHOUGH the computer industry is seen by the government as crucial to the future prosperity of the UK, barriers are still maintained that hinder its growth. In particular planning regulations are failing to allow the provision of property suitable for high technology companies.

In Information Technology Year the very companies which provide the products and services promoted by the government are being stifled, not by active restraint, but by passive conservatism.

Planning classifications and the industrial premises available in the UK still reflect the type of industry prevalent up to 20 or 30 years ago. Property developers are reticent to invest in the type of building required by computer companies, because they equate high technology with high risk.

In their minds, the provision of yet more warehouses is a copper-bottomed investment, and so preferable.

In an attempt to identify the most common stumbling blocks to corporate growth among computer manufacturers and suppliers, Computer Weekly, in conjunction with chartered surveyors Herring Son & Daw, has carried out a survey of computer-related companies.*

Over 300 companies involved in computer and related manufacturing and assembly were asked to complete a survey questionnaire.

Frustrations encountered by the companies surveyed

Lack of suitable premises	64%
Local planning restrictions	24%
Cost	23%
Length of lease	14%
Difficulty obtaining planning permission	11%
Landlord's refusal to allow mixed* use	7%

* *w manufacturing, warehouse and extensive office space combined in one building.*

Over 100 of these have so far replied, and the results are now being collated at Reading University into a full statistical report. But certain trends are already clear.

The principal problem identified by the survey is that there is not a planning category into which buildings required by the new industries fall. The current situation is that a building is either an office, or a factory with office accommodation attached.

If the latter applies, it will not be given planning permission near a town centre. But that is exactly where it must be to be attractive to the type of staff required by computer suppliers.

Over two-thirds of the companies surveyed cited the lack of suitable premises as a major frustration to their plans and local planning restrictions posed problems to almost a quarter.

The root of the problem lies in the change of emphasis in manufacturing industry which has occurred almost as recently as the last decade. Where general industry is usually dirty and noisy, and needs good access to road and rail transport, the high technology manufacturing of the Eighties needs both motorway and airport.

High ceilings, important for ventilation if your company uses heat-generating machines, are hardly relevant to the assembly of integrated circuits on to printed circuit boards, and boards into computer subsystems. Being located in the middle of an unattractive industrial conurbation, or on an anonymous industrial estate, is neither desirable from the clean atmosphere point of view, nor likely to attract the calibre of personnel required to man today's industry.

In general, the newer industries require more flexible office accommodation, very light, clean manufacturing space, and good site layout and amenities. They also need more than one type of use in a single building, preferably located in Southern England, where they can draw on the best technical staff.

The lack of suitable land for such developments, and the negligible amount of institutional finance available, also poses serious problems, particularly in the Home Counties to the west of London, where many of the high technology companies are located.

It is not only UK companies which are affected. The US and Japan already dominate most sectors of the electronics market. As a member of the EEC, the UK provides a useful platform within the tariff-free area for them to set up manufacturing plant.

Our main rivals in this position are West Germany and Eire. But US companies especially will choose an English-speaking country out of preference, and Eire is less attractive both economically and geographically.

Thus, for the Americans at least, the UK is likely to be the first choice for investment in high technology industry in order to make inroads to the huge market of the EEC. But if the planning restriction and the seeming inability to change, and the property developers' reticence to develop suitable facilities, continues, one must question how long it will be before the advantages of the UK are outweighed by the problems.

In its commentary on the survey findings, Herring Son & Daw says that the government should introduce a new use class for buildings to cover the special requirements of high technology industry. Local authorities should learn from the success of both the Scottish and Welsh Development Agencies.

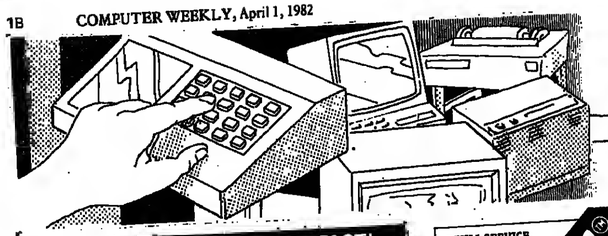
Surveyors should be more aware of what is required by the new industries, and provide for their complex requirements, rather than merely providing large amounts of office accommodation says Herring Son & Daw managing director Nick Owen.

Universities can help too. Those with excess capacity should think seriously of setting up science parks, but must realise that without a suitable infrastructure, the needs of industry may not be met says Owen.

The type of development needed, he believes, is illustrated by the Aztec West project, north of Bristol. With good access to the M5 motorway, and a campus-style layout, it will provide 1.5 million square feet of research and development, industrial and warehouse accommodation, and 0.5 million square feet of offices. Shops, banks, restaurants and recreational facilities are planned in the "village" centre.

But this type of development is still the exception, rather than the rule. Without significant changes in attitudes, the UK will lose both investment from overseas, and its indigenous high technology industries to other countries in the EEC.

*Copies of the survey and recommendations are available, free of charge on its publication at the end of April, from Herring Son & Daw, 26/28 Sackville Street, London W1X 2QL Tel: 01-734 8155.



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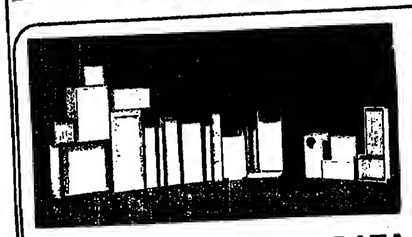

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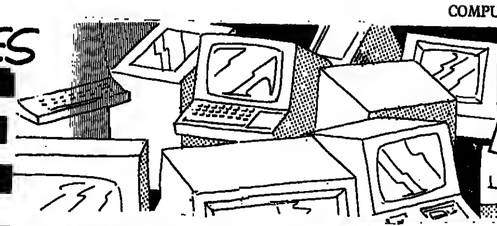

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These are excellent opportunities for programmers and analysts/designers with experience of large real-time systems, and students expecting to graduate this year, to join a company at the forefront of development in both SPC and fully digital public telephony systems. This is an expanding field which will become increasingly important through the next two decades and the company is therefore committed to intensive long term development.

You will become involved in:

★**Advanced digital switching technology**
★**CCITT signalling systems**
★**Telephony applications programming**
★**Device level software design**
★**Admin. and subscriber facilities**

★**Analysts:** around five years in real-time systems
★**Programmers:** one to three years in mini computer software; Assembler or high-level languages
★**New Graduates** should be expecting to achieve a good Computer Science degree this year

These interesting positions, with a successful member of an International group, offer a high commencing salary entirely dependent on experience. This is supported by excellent benefits including a comprehensive relocation scheme, five weeks' holiday and opportunities for overseas travel. Telephone Myriad in Reading to discuss these vacancies in detail. Alternatively, write to us quoting reference RW1/0104/CW and we will then contact you with further information.

Myriad Appointments Limited

30 Fleet Street, London EC4Y 1AA Telephone: 01-353 0981 24 hours
50a London Street, Reading, Berkshire RG1 4SQ Telephone: Reading (0734) 585802 24 hours

SYSTEMS PROGRAMMERS Edinburgh

Edinburgh, elegant, civilised, the Capital and the heart and soul of Scotland's history. This must be one of Europe's most attractive cities with the castle perched on its massive rock dominating the world famous Princes Street and the beautiful gardens.

Close to the Centre stands one of the largest and most up to date computer installations in Scotland. A major financial institution, established for almost 3 Centuries, the Computer Services Division provides processing capabilities for branches and departments based on IBM equipment, currently being upgraded to 2 x 3081's and a 3033.

Due to this programme of expansion, the Systems Programming Department wishes to identify additional Technicians for the support of IMS DB/DC and related software, MVS, VM/CMS, ACF/VTAM and currently VSI, plus package evaluation and capacity planning.

Candidates will be expected to have had a minimum of 2 years experience of software support in an IBM environment, where exposure to MVS should be a distinct advantage.

Interest and challenge, job satisfaction and personal fulfilment–these are only some of the aspects of a career within our organisation. It is also a job that offers you long term security at a time when future prospects in many Companies are rather uncertain.

In addition to an excellent salary and non-contributory pension scheme we can offer paid overtime, flexible working hours, house purchase facilities, profit sharing, a staff restaurant and a first class working environment.

If you wish to expand your experience in line with our development programme, contact our Advising Consultant SHEILA BRADBURY on 061 833 0427 or 0625 523823 (Evenings & Weekends).

Initial interviews will be conducted in Edinburgh, Manchester, Birmingham and London.

Technical Sales & Management Appointments

ISCR

Specialist Computer Recruitment Ltd

SOUTH
James House, Jamea Streat
London W1M 5HS
01-935 0671/486 0461

MIDLANDS & INTERNATIONAL
35-37 Great Charles Street
Queensway, Birmingham B3 3JY
021-236 3781

NORTH
Blackfriars House, The Parsonage
Manchester M3 2JA
061-833 0427

BELGIUM
Avenue Louise 327.
Boite 4. 1050 Bruxelles
010 322-640 7151/71

HOLLAND
Willemsparkweg 92.
1071 H.M. Amsterdam
010 3120-760947

INDUSTRIAL CONTROLS -

RURAL STAFFORDSHIRE

PROJECT LEADER/SENIOR SOFTWARE ENGINEERS

Advanced industrial process control will be the life blood of Britain's industry of tomorrow, and Thorn EMI Automation are now establishing a strong lead in this rapidly growing field. Due to expansion and new contracts, key positions have been created within a specialist team of Software Engineers at the company's headquarters in Rugeley, Staffordshire.

The team is responsible for a variety of projects in industrial control systems development. Projects involve the use of PDP 11, LSI 11 and INTEL processors under RSX 11MS and RMX 80.

We are interested to hear from all people who feel they are suitably experienced and qualified. Two years experience will probably be the minimum we will accept and experience with FORTRAN, MACRO 11, CORAL 66 and ASSEMBLER would be most relevant.

The company offers good career opportunities, with wide scope for involvement with interesting projects and modern techniques and technology.

Competitive salaries, large company benefits and appropriate relocation expenses are offered. The company is based in a pleasant rural low-cost housing area.

For full details and an application form, please complete and return the Freepost coupon below (no stamp necessary) or telephone Digby Dyke on 0905 53335 during office hours or 06845 2210 evenings and weekends. (Transfer charges if necessary).

THORN EMI

staveley recruitment

A division of Staveley Industries plc

Digby Dyke, FREEPOST, Staveley Recruitment, Staveley Computer Centre, Blackpole Road, Worcester, WR3 7BR.

Name

Address

Home Tel. No.

Account Development Consultant

City Based **£12–15K + Car**

Our client is a major international computing services organisation and is a market leader in the provision of computer services to Financial Management. Unique within the industry, the company provides solutions based on Micros, Mini-Computers and a bureau service supported by an international communications network.

Currently we are seeking to recruit a senior technical consultant who can develop and increase revenues from an existing customer base. This division of the company is City-orientated and existing accounts include banks, stock brokers, insurance companies, etc.

Successful applicants will be technically competent, sales orientated people in their mid 20's-30's and will probably come from one of two backgrounds:

- **Customer Support in an organisation selling computer services to the financial sector.**
- **Analysis/programming within a financial institution desiring more customer involvement.**

The usual large company benefits are available including BUPA, company doctor, etc. For further details contact Kevin McCourt quoting ref: 6045.

(6021)

Lloyd Chapman Associates

123, New Bond Street, London W1Y 0HR 01-499 7761

COMPUTER CAREERS IN AUSTRALIA

Opportunities!

Over the past five years we have been retained by several major Australian companies and have assisted more than 100 families to move to Australia.

Opportunities exist for PROGRAMMERS & ANALYSTS with at least three years experience.

For details & brochure write to:
Computer Careers in Australia, C/o SMO, Agent General for Victoria, Victoria House, Strand, London WC2B 4LG.
(Please enclose a self-addressed label.)

Interviews will be held in London and Manchester in June and July 1982.

CHARLES BROOLEY & ASSOCIATES
MELBOURNE, AUSTRALIA

(8887)

SUFFOLK COLLEGE OF HIGHER AND FURTHER EDUCATION
DEPARTMENT OF BUSINESS AND MANAGEMENT STUDIES

LECTURER II IN DATA PROCESSING

Required for 1st September 1982.

The person appointed will be expected to teach on a range of Business Computing courses and should have commercial Data Processing experience and a knowledge of Cobol.

Salary Scale £6462 to £10431 per annum.

Further details and application forms can be obtained from the Principal, Suffolk College, Rope Walk, Ipswich IP4 1LT to whom completed forms should be returned within fourteen days of this advertisement. Please send large s.a.e. and quote post number 4.24.

(9087)

Field Service Engineers

Northern Home Counties

GEC Computers manufacture and market a wide range of highly sophisticated real-time computers. Our customers are in all areas of commerce, industry and the public sector and we have a high reputation both for the quality and reliability of our products and for the extensive field support facilities we provide.

With the increasing sales of our GEC 4000 mini-computer system we now require additional experienced Field Service Engineers, men or women, in the Northern Home Counties.

Working from home you will be responsible for carrying out preventative maintenance, fault diagnosis and rectification on central processors, displays, magnetic and electro-mechanical peripherals on customers' premises, as well as general systems and communications work.

We can offer a competitive salary plus payment for stand-by and overtime, company car and comprehensive initial and on-going product training.

For an initial informal discussion phone Louise Pearce on 01-207 2993 or write with details of experience to

Ivan Hickmott, GEC Computers Limited,
Eyncourt Road, Woodside Industrial Estate,
Dunstable, Beds LU5 4TS.

(6076)

GEC Computers Limited GEC

logistix Logistix Recruitment Limited
10 Grenville Place, London SW7 4RW

Telephone 01-373 3063

Real-Time Systems

Holland: Salaries to £16k

The Dutch division of a large Systems and Software House has a number of vacancies for Project Leaders with substantial experience of real-time mini or micro-computer based systems. In addition to man-management skills, applicants will be required to have had responsibility for systems sizing, hardware procurement and software design and generation on at least one major project. Particular application areas should include one or more of process control, banking, or high reliability military, especially C³ systems. Full relocation expenses will be met and, whilst knowledge of Dutch or German would be appreciated, language courses will be provided. **Ref. L/13/A**

ATE – Systems design

Southern Home Counties: Salary to £11k

A highly regarded Company in the design and manufacture of Automatic Test Equipment for Linear LSI, Digital and Laser trimming device systems has a number of vacancies for Systems Architects. Suitable candidates must hold at least one numerate degree and have two or more years' post-graduate work experience. Of particular interest will be those who can conceive and design a system or sub-system for end user applications. Additionally, you will have direct involvement in the resolution of both in-house research and customer test problems. You will frequently be required to actively participate in Seminar presentations and systems demonstrations. **Ref. L/13/B**

Mini Cobol

Central London: Salaries to £11k

Exciting opportunities have arisen for COBOL programmers to join a renowned Systems and Software Consultancy based in Central London. Applicants aged 22-25 years, should offer a minimum of eighteen months' COBOL experience gained in an on-line mini-computer environment. Since these positions will involve client liaison with both technical and managerial staff, you should be articulate, presentable and possess the ability to appreciate problems from both a technical and business point of view. Working as a member of a project team you will be involved in the programming design and implementation of systems for use by Retail and Merchant banks, Commodity Trading Houses, Life Assurance and General Insurance Companies. These positions represent outstanding opportunities for applicants to enhance not only their programming skills but also to have involvement as a project leader within a high technology environment. **Ref. L/13/C**

Micro Pascal

Herts.: Salaries to £10k

The Research and Development division of a leading multi-national corporation requires a number of Programmers to assist in the development of both Applications and Systems Software. All respondents should possess a Degree or H.N.C. in a relevant discipline followed by at least two years in industry. A minimum of one year's development experience on either Intel 8080/Z80 or Z80 based systems, preferably running under CP/M or UNIX is essential as is fluency in Pascal. A knowledge of protocolling techniques and an Assembler language are useful supplementary skills and will attract a salary premium. **Ref. L/13/D**

Jnr. C & UNIX Programmers

Greater London: Salary to £8k

An internationally recognised supplier of Hardware and Software Systems has a number of vacancies for Applications Programmers and Software Engineers. Suitable candidates, preferably aged 22-25 years, should hold at least one numerate degree. Fluency in either C or PASCAL is paramount, whilst a sound knowledge of Assembler will attract a salary premium. Of additional interest will be those who have current or very recent direct involvement in a systems role on any recognised 16-bit microprocessor running under UNIX, CP/M or MP/M. Although the work content is essentially in-house, a degree of mobility is essential for client visits to national and international sites during implementation and live running stages. **Ref. L/13/E**

Fortran/Graphics

Cambridgeshire: Salaries to £10k

A Cambridgeshire based supplier of Graphics Systems is currently seeking additional FORTRAN Programmers. Suitable applicants will be educated to degree or HNC standard and will have a minimum of one year's subsequent FORTRAN programming experience in a technical or scientific environment. Whilst particular hardware experience is not important, candidates who have had exposure to CDC or Prime based systems will be of particular interest to our client. It is preferable, but not essential for all positions, that you have some knowledge of graphics applications and/or graphical devices. However, applicants who can offer good FORTRAN programming skills and who have a desire to gain experience on graphics based systems will be offered excellent in-house training. **Ref. L/13/F**

Communications Programmers

Central London: Salary to £10k

A number of Development Engineers are required for the Communications Division of a market-leading supplier of message and packet-switching systems. Of particular interest to our client will be Programmer/Designers who have at least two years' experience in the design and development of terminal controllers and protocol convertors, especially where this has required familiarity with bi-synchronous line procedures. Fluency in a high-level language such as Pascal and a working knowledge of an Assembler are prime requirements. Applicants who are familiar with IBM, Burroughs or ICL mainframe protocol standards will be especially welcome. **Ref. L/13/G**

Database & T.P. Consultants

London/Berkshire: Salaries to £16k

An internationally renowned supplier of Database, Teleprocessing and Financial Management Systems is currently seeking additional Consultants to be based in either the Company's Headquarters in Central London or their regional office in Berkshire. Suitable applicants should offer a minimum of five years' Data Processing experience, preferably gained in an IBM mainframe environment. It is essential for all positions that you offer current on-line skills e.g. CICS, ENVIRON or SHADOW and you should have an in-depth knowledge of an IBM compatible DBMS. Career prospects are excellent and there will be opportunities for applicants who wish to specialise in database design, administration, or analysis. **Ref. L/13/H**

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(9033)

COMPUTER & ELECTRONICS RECRUITMENT

UK and International Career Opportunities

In addition to the salary ranges quoted, the following positions carry excellent benefits.

UNITED KINGDOM

WEST END — to £15,000 and car

Senior Consultant

Our client, a leading computer consultancy require a professional with at least 8 years of D.P. experience including applications and systems programming. The successful candidate will provide network database and programme design skills for public videotex systems internationally.

HAMPSHIRE — to £15,000

Programmers

A high calibre software house requires several programmers, preferably with experience of some of the following: PASCAL, FORTRAN, GEC 4000, DEC/VAX; RSX II, OS 4000. The applications will be varied and stimulating.

BERKSHIRE — to £15,000

IBM Assembler Programmers

A well established computer house have a continuing naed for Assembler Programmers with at least a year's experience and preferably, with a degree.

WEST END — to £14,000

Analyst/Programmers

If you have at least 3 years IBM 4300 DOS/VSE experience, using ADABAS and NATURAL, this position with a leading computer consultancy, offers excellent financial and professional rewards.

CENTRAL LONDON — to £12,000

Software Programmers

This is an excellent opportunity for programmers with experience in a Real-time environment and including some mini-computer involvement. You should have at least six months Babbage exposure.

CENTRAL LONDON — to £12,000

Design Consultants

To provide technical consultancy, specialising in Videotex for deployment in private and public markets. You should have at least 3 years experience in communications and packet switching.

NORTH LONDON — to £11,500

Real-time Software Programmers

A leading electronics firm require Software Programmers with communications, military or industrial experience to produce software packages and to integrate and prove systems. Our clients will be particularly interested in candidates with Coral 66.

WEST END — to £11,000

Analyst/Programmers

An oil company requires several Analyst/Programmers with a background in COBOL, preferably under MVS, to work on a variety of applications.

NORTH LONDON — to £10,000

COBOL Programmers

This is an excellent opening for programmers with at least 2 years COBOL experience, ideally on Honeywell hardware to work on manufacturing systems for a large electronic engineering company.

NORTH LONDON — to £10,000

Database Designer

A chance to control a small team in designing and implementing a database for several D.P. systems. Our clients would prefer you to have a degree in a numerate discipline and require that you have at least 2 years database experience.

NORTH LONDON — to £10,000

Systems Analyst

If you have 2 years S/A experience, preferably with engineering applications, you will be a prime candidate for this position. You will have a considerable user contact, and will have the opportunity to design and implement a variety of projects.

WEST END — to £10,000

Systems Programmers

A leading computer consultancy require professionals with FORTRAN and RSX II M experience to take charge of software design, programming, and implementation with a wide range of customers.

ILFORD — to £9,500

Analyst/Programmer

A progressive company within the building industry need an experienced RPG II professional, user-orientated, to work on a variety of financial and commercial applications utilising our clients IBM system 34.

INTERNATIONAL

BELGIUM — to £21,000

PL/1 Programmers

Our clients require computing professionals with at least 5 years PL/1 experience, systems analysis involvement, and considerable telecommunications exposure. Any experience of PASCAL and CORAL would also be desirable for this unusually fine opportunity.

HOLLAND — to £12,500

PL/1 Programmers

A well-known international company require 4 programmers with PL/1 and IMS experience to become involved in considerable client contact and the design and implementation of new programmes.

HOLLAND — to £12,000+car

Programmer/Analyst

An international consultancy seek an RPG II programmer who is prepared to learn Dutch to design and implement a number of applications throughout Holland.

Please send c.v.s to Jim Mackay, Charles Barker Management Selection International Ltd., 30 Farringdon Street, London EC4A 4EA or telephone 01-236 0588 for further information.

Charles Barker
MANAGEMENT SELECTION INTERNATIONAL LTD
Associated offices in 6 cities throughout the world

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Manufacturing Systems

LONDON BASE — **EXCEPTIONAL EARNINGS PACKAGE**

Cullinane (U.K.) Ltd., is a wholly owned subsidiary of Cullinane Database Systems, the world leader in independent data management software on IBM and plug compatible computers. Cullinane's software products comprise a comprehensive information facility designed by specialists in data management and on-line applications. The power and flexibility of Cullinane's database management system software build the foundation for fully integrated, efficient application systems that address the individual needs of business environments. **THE CULLINANE INTEGRATED MANUFACTURING SYSTEM (CIMS)** is such an application designed specifically for the manufacturing environment.

To market CIMS in the U.K., we are seeking to employ a salesman with a proven track record and experience in selling computer based manufacturing systems. The product is new to the U.K. and we are looking for someone who has sufficient knowledge of manufacturing systems to recognise its quality and the experience to develop a largely untapped market-place.

The company recognises the problems involved in marketing a new product and is prepared to guarantee the income of the salesman employed. Full technical support is provided and it is hoped that the person employed for this position will have the competence to become the U.K. Sales/Marketing Manager with responsibility for the marketing of the product and the selection and management of both sales and support staff.

For further details, telephone or write to Kevin McCourt quoting ref: 6044.

Lloyd Chapman Associates
123, New Bond Street, London W1Y 0HR 01-499 7761

THE POLYTECHNIC – WOLVERHAMPTON COMPUTER CENTRE

Senior Analyst/Programmer

Responsible for Administrative computer applications including computerised information systems and library systems, on PRIME computers.

Experience of COBOL and systems analysis and design essential.

Salary scale: Senior Officer 2/Principal Officer 1 £6991-£9693.

The Polytechnic Wolverhampton is an Equal Opportunity Employer and all vacancies are open to both sexes, all races and registered disabled people.

Details and application forms (returnable by 1 May, 1982) from: Establishment Clerk, The Polytechnic Wolverhampton WV1 1SB. Tel: (0902) 710654 – 24-hour ansaphone.

(9098)

Senior Analyst/Programmers
Real-Time Systems
(Bracknell, Berkshire)

The Person
You should have a good degree in Computer Sciences and a minimum of two years' experience of real-time systems on mini-computers. **PASCAL, CORAL, ALGOL or ASSEMBLER** experience is desirable and experience of program specification, design and systems analysis would be a definite advantage.

The Job
You will design, implement and document real-time software to run on 32-bit microprocessor based autonomous and networked computer systems. The processor is the **Motorola 68000** device and development work will be on a **PDP11/44** and the Motorola development system. The systems will perform machine control and level and life handling operations on a scale normally associated with much larger multi-mini-computer installations. Systems will communicate through high speed local area network.

The Company
Protel has been established to exploit the field of computer technology primarily in support of the TV broadcast industry. The company can be expected to expand rapidly offering a real challenge and excellent career opportunities for those there at the start.

The Rewards
A competitive salary commensurate with experience is offered and linked to regular reviews. The company offers all the usual benefits including profit share, private medical insurance, pension and flexible working hours. Coupled to this is the attraction of working in a small company environment and the interest which stems from continually expanding horizons.

Please apply to Mr J W. Anderson
Protel Computer Systems Limited
Alpha House, Terrace Road South
Binfield, BRACKNELL, Berkshire RG12 5DN

Protel

LIBRARY SYSTEMS MANAGER
SALARY NEGOTIABLE TO £10K

We are looking for a self motivated person able to design, implement and develop an on-line real-time system for which this post has been newly created within the Library Service. For an informal chat about the post, ring Bruce Bellamy on Uxbridge 50701. Fringe Benefits may include 75% removal expenses, legal fees involved in house purchase, up to a maximum of £800 and a lodging allowance in approved cases.

Hillingdon is situated on the western outskirts of Greater London and borders Buckinghamshire and Hertfordshire. One third of the 42 square miles of the Borough is Green Belt with attractive residential areas. Central London is within easy reach.

Application forms (returnable by 16 April) and further details available, quoting reference LS/51/42X, from the Personnel Division, Civic Centre, Uxbridge, Middlesex UB8 1DW. Telephone Uxbridge 50699 (24-hour answering service available). Applications from disabled persons welcome.

LONDON BOROUGH OF **Hillingdon**

(9032)

HERTFORDSHIRE COUNTY COUNCIL

Junior Systems Analyst

Salary £9150-£9687 pa inclusive

Due to an internal promotion there is a vacancy for a junior systems analyst within the Computer development team.

Applicants should have at least 1 year's sound experience either in programming or analysis, preferably with a formal qualification in systems analysis, and be educated to at least 'A' Level standard.

During 1982 the implementation of an exciting new development strategy will commence to introduce personal computing, office automation and communications networks into the user departments. Experience in this field would be advantageous.

Generous removal, disturbance and lodging allowances payable in approved circumstances and assistance with housing may be given.

Applications (no forms), giving details of experience and the names and addresses of two referees, to the County Treasurer, County Hall, Hertford, quoting reference CC249, by 12 April, 1982.

(9034)

FINANCIAL TIMES

The Financial Times newspaper is in the process of computerising its accounting function on a PDP 11/70 configuration.
We are looking for computing professionals with good experience and preferably with a knowledge of accounting procedures.

SYSTEMS ANALYST
(£10,794 p.a.)

Our requirement is for an experienced Systems Analyst to play a major role in the development of new on-line applications. This is a position of responsibility within the data processing department. The successful applicant will have had a significant involvement in the investigation, design and successful implementation of at least one major project.

SENIOR PROGRAMMER
(£9,264 p.a.)

Our requirement is for a person with a sound background in BASIC+2 programming under RSTS/E.
Benefits include five weeks' holiday after one year of service, company pension scheme, LVs and season ticket loan scheme.
Please write with full c.v. details or telephone for an application form to:

Miss Susan Smith
Personnel Department
The Financial Times Limited
Bracken House
10 Cannon Street
London EC4P 4BY

(9031)

myriad

TYMSHARE UK

APPLICATION CONSULTANTS

Tymshare has become the fastest growing Computer Services Company in the UK following its policy of Industry Specialisation and its standard of excellence in systems and customer support. Their dramatic growth has created openings for both Experienced and Trainee Consultants for their London City Area, to be involved in pre-sales support and system development projects.

If you are a graduate with the ability to:

- ★ Conduct System Requirement Studies
- ★ Manage Database Projects
- ★ Apply State of the Art Software Technology
- ★ Communicate at Executive level
- ★ Advise on a wide range of applications
- ★ Deliver excellence when under pressure

then in return Tymshare can offer an excellent career path and an attractive remuneration package including company car.

Please reply to: Mr Keith Roberts, Area Technical Manager, Tymshare UK Ltd, Brettenham House, Lancaster Place, London WC2, or phone: 01-379 7822

Myriad Appointments Limited

30 Fleet Street, London EC4Y 1AA Telephone: 01-353 0981 24 hours
50a London Street, Reading, Berkshire RG1 4SQ Telephone: Reading (0734) 585802 24 hours

(90641)

Sales Opportunities

With a network of offices throughout the U.K., our client is a well established OEM with single-vendor responsibility for sales, installation, commissioning and maintenance.

The company is part of one of the largest and most experienced operating companies in the world and is now looking to expand its U.K. operation.

They are currently seeking experienced salesmen to sell into two areas:

Telecommunications Salesmen (London) c. £22K + Car

The successful applicant will have at least 2 years' selling experience with a Telecommunications company and should have a proven track record of achievements.

Peripheral Salesmen (London & Scotland) c. £20K + Car

To sell a range of products. The successful applicant will have at least two years' experience selling VDU's, printers and terminals.

With generous basic salary, guaranteed at £12K, with no upper limit on earnings, this is a most attractive remuneration package.

For further information contact Kate Nash quoting ref: 6041.

(90398)

Lloyd Chapman Associates
123, New Bond Street, London W1Y 0HR 01-499 7761

ARE YOU AN OPPORTUNIST?

Systems Programmer **up to £13,000 p.a.** **Thames Valley**

Our client, an established and highly successful company in the F.M.C.G. Industry are expanding their Data Centre to incorporate systems development for recently acquired Group Companies with further redevelopment of existing corporate systems, keeping abreast of the latest computer techniques and software.

The introduction of a manufacturing requirements planning package and online order entry systems, resulting in a network expansion of batch and interactive facilities has created a new opening for an experienced Systems Programmer or a professional with IBM software expertise eager to develop a career in a specialised environment.

The configuration:	Currently IBM 4331, VS1, CICS, VSPC, VTAM and NCP upgrading to 4341 (Model 11) MVS, TSO and Database implementation in September '82.
The position:	Working in a small, enthusiastic and go ahead team initially providing expertise and advice to user departments on CICS and Database systems but also installing new software for production systems scheduled for January '83.
The person:	18 months + OS VS1 or MVS with T.P. and preferably Database experience. Full training will, however, be given for the right applicant.
The benefits:	24 days' holiday – product discount – full relocation – free car parking – subsidised restaurant – pleasant working conditions and location – active sports and social club.
Contact:	**Bill Evans on Camberley (0276) 64252 to arrange a formal introduction or write enclosing career details to the address below.**

TRIDENT COMPUTER SERVICES PLC.
THE PARADE
HIGH STREET
FRIMLEY
CAMBERLEY, SURREY
GU16 5HJ

(90461)

ADVANCED TECHNICAL SERVICES

RPG **LONDON** **£8,000-£12,000**
Whether you have one year's exp or several of IBM RPGII we have a number of clients who urgently need analysts and/or programmers to assist them on financial and commercial applications. Excellent opportunity to progress on to System 38.

IF YOU ARE A CICS/COBOL PROGRAMMER WE ALSO HAVE URGENT REQUIREMENTS IN BEOFORD, SURREY AND CENTRAL LONDON, MIDDX. Salaries up to £12,000

RPG

SYSTEMS ANALYST **CITY** **£10,500**
If you have a minimum of three years' systems analysis experience on IBM equipment this is a super opportunity to work for a forward thinking D.P. department in a substantial City company.

SNR PROG AND ANALYST **LONDON** **c£11,000**
Large bank requires the above to work on their Burroughs medium systems, previous international banking investment, or insurance background required. Usual banking perks.

PROGRAMMER **SURREY** **£8,500**
A major leisure company require a Programmer with a minimum of 2yrs' COBOL on minis, commercial or accounting systems experience, to join a large systems development team.

BUSINESS SYSTEMS EXECUTIVE **SURREY** **£13,000 + Car**
To act as internal consultant for our clients to assist in the improvement of efficiency and profitability by use of better information systems and improved business methods and procedures.

SNR SYSTEMS PROGRAMMER **S.ESSEX** **Up to £12,000**
Our client, a major financial company, is looking for a very experienced System Programmer to work on teleprocessing technical development. You should have sound knowledge of CICS and be able to communicate at all levels.

PROJECT LEADER/SYSTEMS ANALYST **MIDDX** **Up to 14k + Benefits**
Our client in Middx is looking for a senior analyst with proven experience in design/development and implementation of new systems. Initially to travel to Parent company in USA, to familiarise themselves with new techniques in design and implementation, and on return set up a new design and development project for invoicing, order processing, and process control, DL1/DATA DICTIONARY experience preferred.

PROGRAMMERS/PL1 **MIDDX** **c£8,500**
Two major companies in Middlesex are looking for 3 junior and 3 senior PL1 programmers.

ANALYST/PROGRAMMER **SUSSEX** **c£8,500**
Our client is looking for an Analyst/Programmer with two years' sound practical experience with ICL 2900 or 1900 background and knowledge of TPS would be a distinct advantage, but training if necessary will be provided. This position will offer a real opportunity for further systems development prospect, so please call at once for interview.

BIKEN HOUSE
64 WILTON ROAD
LONDON SW1V 1DE. Telephone: 01-828 5792

(90181)

EXCELLENT CONTRACTING OPPORTUNITIES

Our immediate domestic and international consulting needs are detailed below. If you are of a professional disposition, skilled and dedicated, and wish to join our growing permanent or contract staff, please contact us in respect of these and future opportunities.

INTERNATIONAL

RPG III, S38	Programmer/Analysts	New York
Strong IMS/DB skills	DBA or Designer	Holland
FOCUS	Programmers	USA
RPG II, S34, fluent French	Programmer/Analyst	W Africa
Airline Systems experience	Analyst & Programmers	Holland
Banking experience	Analyst	New York
ADABAS	Analyst/Programmers	USA

UK

COBOL, IMS/DB	Programmer/Analyst	Home Counties
PL/1	Analyst/Programmers	London
VM/CMS	Systems Programmers	Home Counties
IMS/DB	Business Analyst/Designer	Home Counties
COBOL, DG NOVA	Programmer	Home Counties
RPG III, S38	Programmer/Analyst	Home Counties
BASIC, Superbrain	Analyst	Home Counties
Burroughs 6800	Programmer/Analysts	Home Counties
Screenwrite/Honeywell L6	Programmers	Home Counties

For more information please contact:

Tangent

Resources Department
TANGENT COMPUTER SERVICES
102/106 South Street
Romford
Essex
Tel: Romford (0708) 750201
(24-hour answering service)

(90601)

GET IT TOGETHER – WE HAVE!!

EXCITING OPPORTUNITIES EXIST IN:

SALES

GRAPHICS – Major commercial company with exciting new graphics product require dynamic hard hitting salesmen to form new team. Various locations and high earnings potential (NO1)

COMMERCIAL SALES B. W. of London. Well known minis company (new micro soon). 8K basic. £20K O/T (NO2)

OEM SALES – Mini – recognised as company paying high gross earnings: at least £22K. Vacancies around London.
Also scientific sales vacancies in Midlands and West. (NO3)

MICROS Selling to Dealers (OEM) and large End users. Lucrative territory covering East City/Essex/East Anglia/Herts/Kent. 23K base. £22K O/T. (NO4)

SALES EXECS Datacomms. Vacancies in Yorkshire and Home counties West of London. Would consider technical salesmen from outside computer field. 18K Basic. £16K O/T. (NO5)

MINI SYSTEMS – Manchester – Bristol. B'ham – c£20K
Exciting and challenging opportunity to join young dynamic US co. (T/O $82M13 weeks' training in California. Early management ops. CDW10

SENIOR SALES EXEC – Medical Sector – c£22K
An early opportunity for management. Involving large mini comp. syst. Government – Public sector exp. ref: CDW11

P.O.S. SALES EXECUTIVE – Based Nth London – £20K
This challenging post calls for min at 3/4 yrs' exp in comp-systems H/W. High basic c£11K. Selling to retail trade. CDW12

SOFTWARE SALES – London – Lance – £18K+
Good tech background + D/Base Exp + Selling opportunity using advanced s'ware products. CDW13

BANKING-FINANCE – London & H. Counties – £16K
Market leader seeks sales exec's with min of 2/3yrs' exp to cover all D. P. appl. to major finance houses. CDW14

DISTRIBUTOR SALES MANAGER – Sth London – c£18K
Experience of printers – peripherals essential covering Uk territory + existing dist's

CONSULTANTS – David Wilkinson
Norman Occleston

ENGINEERING

FIELD SERVICE ENGINEERS – ALL AREAS – £8.5K + car
Willing to grasp an opportunity with a challenge – it so a leading multi-disciplined systems co. with exciting growth potential need you now!
Rapid expansion has given rise to a number of unique positions to those who have at least 2 years' field experience in micros, minis, printers and associated peripherals. REF. RP/48

DEPOT/WORKSHOP ENGINEERS – All Areas – £7.5K
Enjoy responsibility? Then enjoy working for a leading systems company. Excellent future prospects are part of the rewards for those who can manage a workshop. If you have at least 3 yrs' practical experience on repairing VDU's, Printers Floppy Disk Units and small micro-processor based systems, then apply now! REF: RP/43

PROJECT ENGINEER – Southern Home Counties – £8K
Is working for an industry leader with responsibility a challenge you accept and am communication skills and training your strengths? If yes, then we have the systems company for you. Aged between 25/35, mobile with a broad range of computer systems and electronic knowledge plus 6 yrs' field experience – then hurry to contact. REF: RP/44

TECHNICAL SUPPORT SPECIALIST – £16K + bonus + Car
Are you an ambitious high flying ex-IBM engineer who is looking for that extra [illegible] a leading UK systems support company have a national or European support position for applicants with experience on IBM 360 and 370 main frames, 3300, 4300, 34, and 38 minis, and MVT, OS, DM, and DS/VS1 operating systems plus communications experience. REF: RP/30

FIELD SERVICE ENGINEER – LONDON – c£8K + car.
Interested in working as a field engineer with a company involved in the development of micro based systems? Enjoy working in a company which has excellent prospects in addition to medical care and life insurance? If you can answer these questions with YES, then don't hesitate to contact us. REF RP/30.

CONSULTANT–RICHARD PANTLIN
TEL: 01-437 3942 NOW (24-hrs.)

DATA PROCESSING

SYSTEMS PROGRAMMERS – London – to £15K
2 Systems programmers required by London engineering company with US connections. Experience of both VS1 and MVS and preferably conversions of one to the other. 1031

PROGRAMMERS – Central London – Negotiable
PL1 or COBOL programmers wanted by leading international computer company. ADABAS experience particularly helpful. IBM 4300 machinery. 1026.

PL1 PROGRAMMERS – London and Kent – to £10K
Several vacancies for 2 commercial houses. Minimum of 2 years' experience ideally with some assembler. Good chances of promotion. 1013/1024

ANALYST PROGRAMMERS – Essex – to £11.5K
Solid finance house needs Assembler Progs. with some COBOL and 6 months' analysis for their fast expanding IBM installation. Free pension, BUPA, relocation and inexpensive mortgage after 2 years.

ICL PROGRAMMERS – Essex – to £10K
Cobol programmers with a minimum of 2 years' experience. 2900 machines with DME. Insurance experience useful. Profit sharing. 1041.

STOP PRESS: ICL Contract Programmers urgently required.
We have several positions for programmers and Programmer/Analysts with 2 years experience on most machinery.

CONSULTANT – Don Burridge
BABAGE RECRUITMENT CONSULTANTS
Lincoln Model House
32/34 Gt. Marlborough Street
London W1V 1NA

Babage ...place people...exactly!
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(90479)

ABU DHABI NATIONAL OIL COMPANY

OPPORTUNITIES AVAILABLE FOR COMPUTER PROFESSIONALS

ADNOC is one of the major oil companies in the Middle East controlling the Exploration, Production and Distribution of Oil, Gas and Associated products in Abu Dhabi.

We are providing Data Processing facilities under TP and Database environments to our Group of companies, with a wide communications Network and a number of mainframes.

We require a wide range of suitably qualified and experienced DP staff in the areas of Petroleum Engineering and Commercial applications.

Vacancies exist in:

1. APPLICATION DEVELOPMENT AND SUPPORT

- SENIOR SYSTEM ANALYSTS
- DATABASE ADMINISTRATORS
- ANALYST/PROGRAMMERS & PROGRAMMERS

The candidates should have a university degree and 3 to 8 years' experience in one of the following areas:

SYSTEM ANALYSIS, DESIGN and PROGRAMMING (COBOL/FORTRAN), PLANNING, QUALITY ASSURANCE, IDMS DATABASE and TP SYSTEMS.

Some positions also require experience in Geological Databases, Contouring or Reservoir Modelling. A degree in Science or Engineering is required for these positions.

2. SYSTEM SUPPORT

- DATABASE SUPERVISOR
- SYSTEM ENGINEERS

The candidates should have a university degree and 3 to 8 years' experience in one of the following activities:

ICL VME/B AND IDMS Support, IBM DOS/VSE Support, COMMUNICATION INTERFACES and PROTOCOLS, NETWORK MANAGEMENT and PERFORMANCE ANALYSIS.

3. OPERATIONS

- SHIFT LEADERS
- SENIOR OPERATORS & OPERATORS
- PRODUCTION CONTROLLERS

The candidates should have adequate education and sound operational knowledge on large ICL and IBM mainframe operations.

ADNOC benefits include a high tax-free remuneration, good career prospects, free medical care, free furnished family accommodation, paid home leave for the family and educational assistance.

Knowledge of Arabic for all positions will be an advantage.

Interested candidates are invited to forward their detailed applications, together with photocopies of their education and experience certificates, within two weeks from the date hereof to:

PERSONNEL DIRECTORATE – EMPLOYMENT DIVISION
ABU DHABI NATIONAL OIL COMPANY – (ADNOC)
P.O. BOX 898 – ABU DHABI – U.A.E. (9059)

IMMEDIATE CONTRACTS FOR PROGRAMMERS

PROJECT LEADER	Croydon	IBM COBOL VM/CMS
PROGRAMMERS	S. Coast	IBM COBOL OS/MVS
ANALYST PROGRAMMERS	London	IBM PL1 CICS/ADABAS
ANALYSTS	S. Coast	IBM
ANALYST PROGRAMMERS	London	IBM Sys 34 RPGII

For further details contact NIC POLAND
TLP
A Division of Tate & Lyle Industries Ltd.
Leon House, High Street, Croydon CR9 3NH
01-680 2323
A Member of the Tate & Lyle PLC Group

Member of Computing Services Association

(9065)

LANGTON

TELECOMMUNICATIONS CONSULTANTS

Salary to £16,000 plus generous benefits package

Langton, one of the leading consultancy/systems houses, are looking for telecommunications consultants to join a well established team working in the areas of long range technical planning, networks, office systems, databases and viewdata.

Applicants should have 5 or more years telecommunications experience, during which time they have undertaken consultancy work with users. Specialist knowledge of PTI services and data communications would be a distinct advantage.

Good self presentation is essential.

If you would like to know more, telephone or write to Colin Leeson 9026

LANGTON
Langton Information Systems Limited,
133 Oxford Street, London W1R 1TD. Tel: 01-434 1831

UNIVERSITY OF LONDON
GOLDSMITHS' COLLEGE

Computer Manager

Applications are invited for the post of Computer Manager to be generally responsible for the College computer service, based on a DEC VAX 11/750.

Applicants should hold a degree or equivalent and have experience of management in computing service, preferably in higher education. Ability to deal with a wide range of users and to supervise the work of programming and operating staff will be required. Salary within the range £11,148 x 4 increments to £12,543 per annum inclusive.

Further details and application forms should be obtained from the Personnel Office, University of London Goldsmiths' College, New Cross, London SE14 6NW, not later than Thursday, 8th April, 1982. (9052)

UMIST

DEPARTMENT OF COMPUTATION

REF: COM/22/BC Applications are invited for a three year Research Assistantship working on an industrially sponsored study into the application of speech recognition in the telecommunications industry. The work will involve the production of artificial intelligence software to run on a PDP-11/44 host computer interfaced to a variety of speech recognition hardware. Programming will be mainly in Pascal but some use of AI languages such as PROLOG or LISP is envisaged. Applicants should have an Honours degree in Computer Science or a related discipline and at least two years' programming experience.

Salary will be on the scale £5265-£7290 per annum.

Requests for application forms, quoting the above reference, should be sent to The Registrar, Room 88, UMIST, PO Box 88, Manchester M60 1QD. The closing date is 9 April 1982. (9024)

COMPUTER OPERATOR

BAHRAIN

We are: Halliburton Ltd a major American Oilfield Service Company, situated in Bahrain.

We have: Hardware: IBM System 34 Model C-24 with a single 63.9 M Byte Disk, Main Memory size of 64K, a 3262-B1 650 LDM Printer and a 5261 Display Station.

Software: IBM SSP Release 7 with all utilities (DFU - WSU - SEU - RPG and SDA) available systems used include General Ledger, Accounts Receivable, Sales Analysis, Accounts Payable, Inventory Control and Fixed Assets.

We need: An Operator with at least 2 years S/34 experience to work on a shift system. Some knowledge of all utilities including RPG II and OCL and some accounting is essential.

We offer: An attractive Salary Package including free furnished accommodation and annual air fare to/from point of origin.

Important! This is a single status appointment.

Please phone Sue Ashby or Anne Betts 01-836-6775 (days) or 0844-53531 (eves).

Computer Personnel International
THE ABRAXAS RECRUITMENT SERVICE DIVISION OF COMPUTER SYSTEMS INTERNATIONAL
30-32 Southampton Street, London WC2. 01-836 6775

INTERNATIONAL MICRO SPECIALISTS

c £17,000 + Bonus + Expenses

IMS International Inc., a major American management services company, is presently developing an important micro based system for the European medical community. IMS has a turnover of $200M +, offices in over 40 countries and is already the leading company in this field in the US, Canada and Australia.

The standalone systems utilise the latest micro technology; storage devices and peripherals, which must be kept up to date for commercial reasons. Extensive new applications are planned offering a range of interactive facilities for both health care and business applications.

Two senior people are now required to work on the further development and implementation of the systems.

APPLICATIONS SOFTWARE MANAGER

c £17,000 + BONUS

Working initially in Germany, with the base office in London, with a small, high calibre team, you will have responsibility for the design, development, testing, implementation and documentation of the applications software. You will assist in the choice of software languages although it is likely some ASSEMBLER will be used. You should also have experience of Systems Analysis, working directly with users, an understanding of various operating systems and a degree.

LEAD SYSTEMS ENGINEER

c £17,000 + BONUS

After familiarisation with the hardware and software in the U.S., your area of responsibility will be for the operating software and the hardware configuration. You will require experience of analysis, hardware feasibility studies, BASIC and other programming experience. Degree essential.

Both positions will entail travel of work abroad. Foreign languages are not essential but you must be available to work outside UK for long periods, quickly forming working relationships.

The first implementations will take place in Germany and, after enhancements, the system will be extensively marketed in other European countries. Future projects within the group could take you anywhere the group operates, using a wide range of hardware.

For further information please contact SIMON BERRY by telephone or letter at the address below.
All applications will be dealt with promptly in strict confidence.

ABRAXAS
(Computer Employment Limited)

357 Euston Road London NW1 3AL
01-388 0111 Licence No. SE(A) 3839
PERMANENT RECRUITMENT • CONTRACT SUPPORT • DATA PREPARATION

ADVERTISING SPECIALIST

Abraxas provide a range of computer services to companies mainly in London, Southern England and abroad. In addition to placing permanent and contract staff we also provide data preparation, magnetic media and consumables, business computers, applications software and general bureau services. Current turnover is c.£1.4 million.

We wish to develop our client advertising service which combines effective advertising with first-class back-up from eight recruitment consultants. With leads provided by these consultants, your responsibility will be to establish client requirements, campaign costing, designing, writing and producing advertisements. Interviewing and shortlisting will normally be carried out in-house by the recruitment consultants.

Reporting only to the Recruitment Director, you will control your own activities and have ample opportunity for career progression. You should have relevant experience and be creative, self-motivated and presentable. Earnings will be geared to your performance and in your first year will be between £12-£24,000, although there is no upper limit. Company car provided.

For full details, in strict confidence, please contact SIMON BERRY on 01-388 0111 or tonight on 0689 50249

ABRAXAS

CONTRACT ASSIGNMENTS

Join the growing team of Abraxas contract professionals with one of the largest sales teams in London; we always have a wide variety of assignments.

Over the next three months we have a special need for people with the following technical skills:

ICL COBOL VMEB some with IDMS and or TPMS
40-60 positions in London, Southern Home Counties and South West.

IBM COBOL CICS or DLI CICS
Many positions in London and Home Counties

IBM COBOL with IMS DB
15-20 positions in London, Home Counties

For more information and a confidential discussion, telephone CLAIRE COOMANSINGH or LYNN PACKARD of our CONTRACT RESOURCES—TODAY.

INTERNATIONAL BANKING CITY OF LONDON

Manufacturers Hanover Trust Company is the fourth largest American Bank. The International Division's Systems development group, based in the City, is responsible for the development and maintenance of computer systems for all overseas branches.

We are at present further developing our Customer Information System which operates on IBM GSDequipment and is used by our overseas branches. As the larger branches develop and requirements increase, their need is being satisfied by a move to an IBM 4300/CICS environment. Whilst the majority of the activity will continue to be RPG II, there will be the opportunity to learn COBOL.

- OPPORTUNITY TO TRAVEL
- SUBSTANTIAL ANNUAL BONUS (AFTER QUALIFYING PERIOD)
- TRAINING AND CAREER PROGRESSION
- NON-CONTRIBUTORY PENSION
- 5% INTEREST MORTGAGE
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- INTEREST-FREE SEASON TICKET LOAN
- FREE STAFF RESTAURANT

SENIOR ANALYST/TEAM LEADER

To £12,500 + **review after 6 months**

Must have International Banking experience and proven success in the design and implementation of small projects. An RPG II programming background is desirable but not essential. You will be required to take full responsibility for all systems documentation, scheduling and the supervision of projects throughout their life cycle. You may be required to travel abroad and deal with users at all levels for which good oral and written skills are necessary.

SENIOR PROGRAMMER

To £10,000 + **review after 6 months**

Must have at least three years' RPG II experience in a financial environment with a knowledge of S/3 or S/34. You must be able to produce programme specifications, set and adhere to deadlines and take responsibility for all programming aspects of a project, including supervision of two or three other programmers. Good oral and written skills will also be required.

PROGRAMMERS

To £9,000 + **review after 6 months**

A minimum of 18 months' RPG II programming experience in a financial environment. Preference will be given to programmers with IBM S/34 experience, although training in IBM S/34 operation may be given to the right applicant.

To join our progressive and professional team please phone Ray French on 01-600 5666, or write direct to Manufacturers Hanover Trust Company, Queensbridge House, 60 Upper Thames Street, London, EC4.

8078

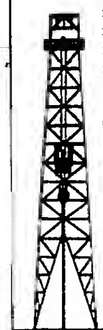
MANUFACTURERS HANOVER TRUST COMPANY

developing the banking systems of the future

Data Processing Manager

Eastern Hemisphere Operations

Do you meet these requirements?



- RPG II experience.
- Familiar with System 34.
- Ability to manage department.
- 5 years analysis experience.
- Willing to spend short periods in foreign assignments.

As a result of rapid expansion of the business, NL Petroleum Services, one of the largest and longest established oilfield services companies, has a vacancy for a Data Processing Manager, responsible for managing the U.K. installation and developing and implementing the Eastern Hemisphere systems plan.

Please write with full career details to: Employee Relations Dept. quoting ref. CO.1.

NL Petroleum Services
35/36 Grosvenor Street,
London W1X 9FG

South Manchester

We are an established systems house with a reputation for professionalism in the small business and large systems markets. We require additional experienced data processing professionals to join our team based at Prestbury.

SENIOR SYSTEMS ANALYST PROGRAMMERS

A knowledge of IDMS or similar database systems and ICL 2900 hardware would be a distinct advantage.

Candidates must have the attitude and personality to fit into a team environment and work closely with client staff.

We can enhance your technical skills and offer career progression within an expanding organisation. Salaries and additional benefits will not present a problem to suitable applicants.

Please write to Mike Brown at the address below enclosing a c.v.

The Old Mill, The Village, Prestbury, Cheshire
Tel: Prestbury (0025) 827863

(8053)

Systems Analysts

Starting Salary up to £9,000

Due to an exciting expansion programme we now have vacancies for Systems Analysts with at least 12 months post training experience, to join a progressive Company with an excellent computer installation, sound prospects for advancement and comprehensive employee benefits.

As part of Sears Holdings we provide DP services for companies within the Sears Group and are therefore involved in the development of a wide variety of applications. The department uses structured techniques and on line facilities to assist development.

The current hardware includes two IBM 3031's with attached 3800 laser printers, IBM 8100's and POS and a purpose built Computer Centre is scheduled for completion in 1983.

Conditions of employment are excellent and benefits include generous relocation expenses, BUPA membership and pension and life assurance schemes.

Interested? Telephone Leicester 877051 for an application form.

BRITISH SHOE CORPORATION
Sunningdale Road,
Leicester LE3 1UR

COMPUTING OPPORTUNITIES IN Saudi Arabia

ARABIAN DATA SYSTEMS

ALL SALARIES QUOTED ARE TAX FREE

ADS are a well-established Saudi Arabian Consultancy Group with a number of Facility Management Development projects. These include the new Jeddah International Airport computing facility, a new town electrical supply service, a municipality planning and management data centre, a meteorological bureau and a number of smaller commercial projects.

For a few of these positions spoken Arabic would be an advantage. The Company would also be interested in Arabic speaking Computer Science graduates for future vacancies.

0401 **DEPUTY OPERATIONS MANAGER** — **£16,500 to £20,300**
Deputy Operations Manager to supervise daily operation of large IBM 3031 installation (40 staff) in Jeddah. Minimum of 8 years' IBM operations experience with last 2 as Operations Manager of Deputy in large MVS – JES 2 environment with extensive local and remote on-line multiple user processing. Must be proficient in IBM JCL, Job scheduling, IBM negotiations/liaison, M/C room planning and shift supervision. Previous OS/VS1 experience an advantage.

0402 **TELECOMMUNICATIONS ENGINEER** — **£16,500-£20,300**
Minimum of 5 years' hardware installation/maintenance of IBM and IBM compatible VDU's, terminal printers, Modems and communication controllers. Practical experience of data/voice line installation/testing, network performance monitoring and design. Preferably knowledge of ACF/VTAM/NCP and BSC/SDLC protocols.

0403 **SENIOR PROGRAMMERS** — **£15,000-£18,000**
A number of vacancies exist for experienced Senior Programmers with IBM Assembler/COBOL in an on-line environment (CICS/COMPLETE) using Database (IMS, ADABAS). At least 6 years' programming experience is required.

0404 **OPERATIONS SUPPORT TECHNICIAN** — **£14,250-£16,250**
Minimum of 6 years' IBM (OS/VS1 plus recent MVS/JES 2) experience, fluent in JCL, DASD Space Allocation/Management, as support Technician in large IBM installation. Practical experience should include Panvalet, FDR, IBM Utilities, Syncsort and TMS.

0405 **SHIFT LEADER** — **£14,250-£16,250**
Minimum of 6 years' as IBM Operator last 2 as Shift Leader in MVS/JES 2 preferably with the experience of CICS or COMPLETE. Should be fluent in IBM JCL, FDR, IBM Utilities, Syncsort, TMS.

0406 **SENIOR OPERATOR** — **£10,00-£12,000**
Minimum of 2 years' as Senior Operator in IBM MVS/JES 2 environment preferably with previous OS/VS1 background. Must be fully conversant with FDR, TMS and IBM Utilities.

0407 **COMPUTER OPERATOR** — **£8,300-£10,000**
Minimum of 1 years' OS/VS1 plus 1 year MVS/JES 2 in large IBM 303X installation as Computer Operator.

0408 **COMPUTER OPERATOR** — **£8,300-£10,000**
Minimum of 2 years' DOS/VSE on 4300 series as Computer Operator familiarity with CICS would be useful.

All positions are single status based within Jeddah or Yanbu. Comprehensive range of benefits include:

- Annual renewable contract
- Free furnished accommodation
- Car allowance
- Shift allowance (positions 0404 to 0407)
- Eligibility allowance
- Free medical cover

For further information telephone Roger Allington or Ian Murray West on 01-493 2947 (day), or reapectively Little Gaddesden (044284) 3536, Milton Keynes (0908) 563415 (evenings/weekends), or write quoting ref: 9900.

DALROTH & partners limited
4 HALF MOON STREET
LONDON W1

SENIOR ANALYST/PROGRAMMER

London based — **Salary Negotiable**

Our clients, a well-established systems development consultancy, urgently require an Analyst/Programmer with at least five years' experience of accounting systems/MSA on IBM machines using COBOL.

Applicants must have conversational German, be self motivating and prepared to spend part of their time in Western Europe.

The successful candidate can look forward to an interesting and challenging position with a good salary and other company benefits.

As specialists in Computer Recruitment we also have many other vacancies in London and S.E.

For further details telephone 0293 514071 8 a.m. - 9 p.m.

ATA Computer Recruitment
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(24-hour Answering Service)

ata COMPUTER RECRUITMENT

(8067)

UNIVERSITY OF LONDON GOLDSMITHS' COLLEGE

Applications are invited for the following new posts in connection with the installation of a DEC VAX 11/780 computer to provide computing facilities throughout the College:

1) **Systems Programmer.**
2) **Applications/Advisory Programmer.**

Post 1. This post will be concerned primarily with the systems maintenance and support of the equipment and applicants should have substantial experience of the VAX system. Salary within the range £6,801 - £ 8 increments to £10,824, per annum inclusive.

Post 2. Applicants should have experience of programming in BASIC, FORTRAN and PASCAL and of advising users. They will be expected to provide programming support to members of staff and to assist users to find appropriate solutions to their computing requirements. Salary within the range £7,125 - £ 8 increments to £10,824 per annum inclusive.

Further details and application forms should be obtained from the Personnel Officer, University of London Goldsmiths' College, New Cross, London SE14 6NW, quoting clearly which post you are applying for. Closing date: Monday, 26 April, 1982.

(8081)

HUNTING

OILFIELD SERVICES (UK) LIMITED

HUNTING OILFIELD SERVICES (UK) LIMITED, one of the leading companies in the UK, giving support services to the International drilling industry both in the UK and overseas, has a requirement for the following staff:

ANALYST/PROGRAMMERS

for employment in Aberdeen on a variety of computing duties

SALARY £8,000+

The installation comprises a VAX 11/780 with Fortran, Basic, Adabas-M database, EX-11 Word Processing, Payrolls, Sales, General and Purchase Ledgers, Financial Modelling, Network Analysis, Finite Element Analysis, Magestax Graphics and a Production Control System will shortly be added.

Candidates should preferably have experience or knowledge of one or more of the above topics, and an engineering background for one of the posts would be an advantage.

Apply, giving full personal and employment details, in writing to:

N. CAMPBELL
HUNTING OILFIELD SERVICES (UK) LTD.
BLACKNESS ROAD
ALTENS INDUSTRIAL ESTATE
ABERDEEN AB1 4LY

8044

intel delivers the future

INTEL IS EXPANDING IN SWINDON - NEW EUROPEAN DATA CENTRE

Intel is the leading company in the microelectronics industry. To support planned growth, we are currently installing an IBM 4341 to form the basis of our European Data Centre. Running under MVS and using CICS and SPF, this will be used to develop major on-line applications initially in the areas of customs warehousing and order processing for all our European locations. We now need additional experienced people to help us respond to our challenge.

SYSTEMS PROGRAMMER - £10,500-£13,000

Required to support and develop our international terminal network. The ideal candidate will have at least two years experience of supporting CICS/VS, VTAM and NCP in a medium to large scale TP network, together with a good appreciation of general MVS systems programming.

SENIOR ANALYST PROGRAMMER - £10,500-£12,750
ANALYST PROGRAMMERS - £10,000-£11,500

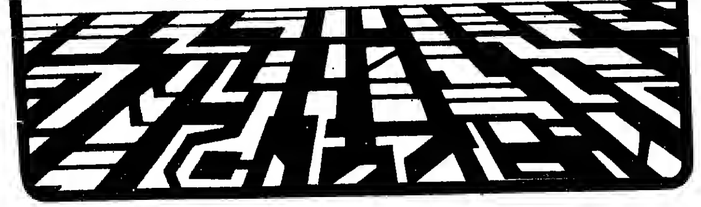
The ideal candidates will have 3-5+ years experience of on-line applications, preferably using COBOL and CICS in an IBM environment. This being a team atmosphere, sound experience and potential must also be coupled with good communication skills and the ability to work closely with users at all levels.

The conditions of service are excellent and relocation assistance is available for the right applicants.

If you feel that you can meet our exacting requirements, please send brief career details to EIS, Intel International, Pipers Way, Swindon SN3 1RJ or call Colin Evans or Ray Withey on Swindon 488388 to arrange an interview.

intel

These vacancies are open to male and female applicants. 9047



Principal Software Engineer

We are a small company functioning at the more complex end of modern computer technology, and utilise highly skilled software engineers working in small teams.

We have a tradition of developing concepts into deliverable products and the selected applicant will be expected to lead a team in the development of a new product.

Our product area covers mainly Simulators and Marine Systems for which we use an established British mini-computer system.

In the age range 25 – 35 years with a relevant degree, and at least four years in-depth real-time software experience, with a good working knowledge of Coral and Assembler. The applicant must also be able to communicate effectively at all levels and have the ability to organise and motivate his/her team.

We offer an attractive salary, contributory pension scheme, and financial assistance towards relocation costs where necessary.

Applicants are invited to send personal details, career and salary progression information to:
Chris Wessier,
Personnel Officer,
Racal-Decca SMS Limited,
247 Burlington Road,
New Malden,
Surrey.

Racal-Decca SMS RACAL

World leaders in electronics

DALROTH computer personnel

CONTRACTS

		per week
IBM ASSEMBLER CICS DL/1 PROGRAMMER	GERMANY	£950
IBM CDBOL IMS DESIGNERS and PROGRAMMERS	LONDON	£500+
IBM PL/1 IMS CICS PROGRAMMING TEAM LEADER	W. LONDON	£500
IBM MVS SYSTEMS PROGRAMMER	GERMANY	£550
IBM CDBOL CICS DL/1 PROGRAMMER	S. COAST	£450
SNA SOFTWARE QUALITY CONTROL (DEC pref.)	ITALY	£neg.
BURROUGHS B1800 DMS 11 GEMCOS PROJECT LEADER	SCOTLAND	£400
IBM PL/1 CICS ADABAS ANALYST/PROGRAMMERS	MIDDX	£400
IBM COBOL DL/1 DDS PROGRAMMERS	C. LONDON	£350
ICL COBOL VME/B IDMS PROGRAMMERS	WILTS	£Neg

For further information during office hours please ring 01-493 2947; evenings 7.30-9.30pm or weekends please contact Colin Maslen on Huntingdon (0480) 214493 or Roger Allington on Little Gaddesden (044284) 3636 or write quoting reference 9896.

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Further details and application forms should be obtained from the Personnel Office, University of London Goldsmiths' College, New Cross, London, SE14 6NW, not later than Thursday, 8th April, 1982. (9083)

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Please phone Howard Dowding for more information, or write in sufficient detail to make an application form unnecessary to:

John Cunnell, UK Personnel Controller,
Nixdorf Computer Limited, The Hounslow Centre,
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For further information please telephone Mike Howells on 01-743 8000 Ext. 4564, if however you require an application form write to **BBC Appointments, London W1A 1AA. Tel: 01-580 4468** Ext. 4619 quoting ref. 2265/CW.

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As sole importers of Volvo Cars and Parts to the UK, Volvo Concessionaires Ltd achieved record sales in 1981 – success we intend to build on in 1982 through continually improving our business and computer systems.

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with exposure to structured systems and programming methodologies in an on-line database environment.

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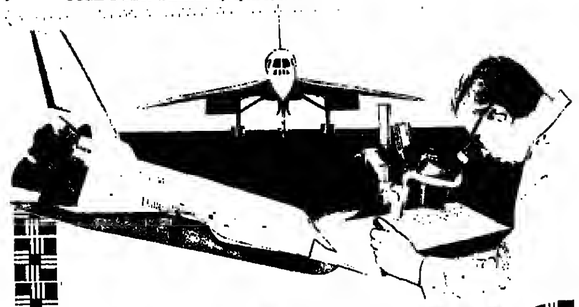

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We are looking for an individual to provide international support on the introduction of new products to the market place and to our sales force. We need someone capable of giving seminars and presentations in a professional manner and who understands international trends in technology. A high degree of technical skill is called for and suitable applicants will have at least five years experience in a support role and have specialised in the communications field.

Special Systems Consultant

Our special systems group is responsible for the design and implementation of non-standard systems, either hardware or software and many of the projects involve real-time operating systems and communications. We need someone capable of devising solutions to suit customers needs where the highest levels of reliability and performance are critical. Suitable applicants will have in-depth experience, either hardware or software, or a combination of both, on sophisticated computer systems.

If you feel that your expertise could contribute to our company's success then contact us immediately.

Company benefits for these positions are excellent and include competitive salaries, a non-contributory pension scheme, free life assurance and free BUPA. In addition the marketing position carries a company car.

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SYSTEMS MANAGER/ PROGRAMMER

LOCATIONS CAMBRIDGE AND LONDON

Petscentre International is one of the world's leading organisations dedicated to all aspects of new product and process development and currently has laboratories in the UK, Belgium, Australia and the USA, plus offices throughout Europe.

We are in the process of improving our inter-unit communications and wish to recruit an experienced Systems Manager/Programmer to assist in establishing a corporate strategy in mini and micro computer systems leading to an integrated office system operating between the above locations.

Qualified applicants will appreciate the implications of the task we are performing and we will, of course, be looking for an international breadth of view.

The successful candidate should be fully aware of the high technology products currently available, data communications systems, network design, word processors, electronic mail etc. as well as software – particularly database systems and financial systems. Mini and micro experience with DEC, Wang, Honeywell, IBM and Apple will be beneficial plus experience of information systems/WP installation, training and application.

Applicants will ideally be in their early 30s and will be expected to be able to communicate at all levels. Please apply in writing with full career details or telephone for an application form.

Dr R. C. Whelan, Operations Director
PATSCENTRE INTERNATIONAL
Melbourn, Royston, Herts SG8 6DP
Tel: 0763 61222

(8076)

COBOL

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to £10,500

The Company: An internationally respected manufacturer and distributor based in WEST LONDON. They operate a friendly medium-sized environment using an IBM 4341 with CICS and DL/1.

The Opportunities: Three openings for COBOL professionals on a variety of commercial systems. Whilst preference is given to individuals with IBM backgrounds, full training is given where necessary.

The Rewards: A first-class salary and benefits package which includes 3 annual reviews, free lunches and relocation expenses.

Interested? For more details, contact Tony Cox on the number below or on 567 3441 outside office hours.

Computer Two Thousand Ltd
Data Processing Consultants
217-218 Tottenham Court Road
London W1P 9AF
Tel: 01-636 7584

(8088)

SAUDI ARABIA

ABWA a major facilities management contractor requires Data Processing Professionals to fill positions in RIYADH, SAUDI ARABIA.

Living and working in the modern city of Riyadh offers many excellent benefits such as world travel and broadening your financial horizons. We are offering positions to highly qualified personnel to join our Multinational Project Team in Riyadh where we have installed an IBM 4341, operating under DOS/VSE with VSE/POWER, ADABAS, CICS/VS, ATMS III STAIRS and PROJACS.

Preference will be given to those candidates with experience in the areas of Construction Project Management, Payroll/Personnel, General Accounting and Text Management. Arabic/English bilingual ability is a plus.

ABWA offers 12 and 18 month contracts with a highly competitive salary and benefits package that includes housing, schooling for children, Car, Medical, eight weeks vacation and yearly round trip air fare to point of origin.

POSITIONS OFFERED:

SYSTEM ANALYSTS

Minimum of 4 years' experience with knowledge of COBOL and broad experience background to participate in definition and development of Applications Systems. Successful candidates will have demonstrated ability to organise and lead a team of 3 to 5 Programmers. Written communications skills and Data Base experience essential. Experience in Color Graphics or Micrographics is a plus.

PROGRAMMERS

Minimum 2 years' experience in COBOL using CICS and ADABAS or other DBMS. Experience in documentation and ability to organise personal work objectives essential.

SYSTEM PROGRAMMERS

Minimum 3 years' experience working in a medium to large scale dynamic environment providing applications and operations support. Successful candidate must have heavy experience with DOS/VSE, VSE/POWER, CICS/VS, ACF/VTAM and ADABAS. Experience with STAIRS ATMS III PROJACS and ability to evaluate Hardware and Software helpful.

OPERATORS

Minimum of 2 years experience in a DOS/VSE, CICS/VS operating environment supporting many On-Line users. Position requires responsible individuals willing to rotate on a 2 shift basis.

TECHNICAL TRAINING

Minimum of 3 years' experience in Data Processing Instruction from basics through Systems Analysis including COBOL and PL/1 Instruction. Heavy emphasis placed on skills required to organise and structure quality training programs including preparation of instructional aids.

Assignment will consist of conducting classroom sessions in English for up to 20 Saudi Nationals, plus organising and conducting On-The-Job training exercises.

USER TRAINING

Arabic speaking personnel having 3 to 5 years of Data Processing experience in either training or a development related area. The task will consist of assimilating application systems, instruction of users and aiding Analysts in system implementation.

Qualified and serious candidates submit resumes and salary history to: BOX NO.1195 Computer Weekly, Quadrant House, The Quadrant, Sutton, Surrey, SM2 5AS.

(8127)

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The ideal candidate (male or female) will be :-

- 30 to 50 years of age
- experienced in the field of Computer assisted numerical control using APT.
- experienced in the management of a software team.

In addition you will need a high degree of drive and enthusiasm.

Reporting to the M.D. with a high level of autonomy you will be responsible for applications support regarding their current and prospective client base; forward planning for future applications and product developments.

The benefits package includes a £18,000 basic salary + Company bonus scheme + profit share; a choice of car fully maintained (including private mileage); an excellent pension scheme; relocation expenses and worldwide travel.

For an initial and confidential discussion please call Newbury (0635) 48709 or write in strictest confidence, quoting ref: 317/BR, to:-

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55a Northbrook Street Newbury Berkshire RG13 1AN Telephone Newbury (0635) 48709

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Because of the travel aspects, we can't accept applicants with dependant children, but after 2 to 3 years on the circuit, you'll have acquired an unrivalled knowledge of Mobil's international operations to fit you for an assignment in EDP or Financial Management virtually anywhere in the world.

Aged 25 to 35, you should have at least 6 years' experience of large-scale IBM mainframe together with a knowledge of minis and specialist expertise covering systems analysis, programming, project management and computer operations. First class communication skills, good presence, tact and diplomacy are essential requirements, as is a good working knowledge of accountancy and financial operations combined with a willingness to adapt to local working practices. Ability in French or Spanish would be an asset.

We're offering an extremely attractive salary package together with a foreign service premium, free accommodation, generous travel and living allowances (including spouse) travel paid home leave, life assurance and an excellent pension scheme.

Please write, giving details and qualifications, experience, age and current salary to **Mr. P. Stone, Mobil Services Company Limited, Mobil House, 54/60 Victoria Street, London SW1E 6QB.**

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If you find this post interesting, please send your application, including CV and expected salary to:-
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Enator (U.K.) Limited is the British subsidiary of the International Enator Group of Companies. The Group, with headquarters in Stockholm, Sweden, number altogether 160 consultants and had a turnover of £6 million last year. The companies' products cover the whole range from management consulting through system development and implementation, via micro-processor systems, to staffing of data processing projects. We are totally independent of any hardware manufacturer. Our records cover many well-known clients and we have earned a reputation for our working standards – taking full responsibility for meeting cost and time budgets. These clients cover a very broad range of activities and our companies have specialised experience in Retail and Distribution, Banking, Finance, Manufacturing and Travel and Tourism.

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If you cannot attend, but the prospects interest you, please contact Margaret Brown for information on Fleet 22161 or write to her at:

SYSTEMS DESIGNERS LIMITED

Systems House, 105 Fleet Road, Fleet, Hampshire GU13 8NZ

On page 41 of the March 18, 1982, edition of Computer Weekly, RJB Manpower Services Limited carried a reference to the well-known Scrabble word game.

Scrabble is a registered trade mark belonging to J. W. Spear and Sons PLC, a fact that was not acknowledged in the original advertisement. (9011)

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(9040)

Chief Systems Programmer

– East Anglia
Salary: £neg.

Ransomes, a leading manufacturer of tillage and grass cutting equipment, is now embarking on a major project involving the implementation of OMAC 29 in the manufacturing organisation.

The Company is looking for a suitably qualified programmer to fill the vacancy of Chief Systems Programmer. The successful applicant will be responsible for all programme development, software *implementation, technical support, etc.* Communications systems play an increasingly important part in the Company's future, and it is essential that candidates possess relevant experience in the development of on-line systems. All systems are run on an ICL 2960, using Communications Manager, MATS, GEORGE 2+, MAXIMOP.

The salary offered with this position will be appropriate to the responsibilities involved.

We offer a sound Pension Scheme, canteen facilities and an active Sports and Social Club.

Further details and application forms available from:

KEN BURKITT, Personnel Administrator, Ransomes Sims and Jefferies P.L.C., Nacton Works, Ipswich, Suffolk IP3 8QG. Telephone: Ipswich 712222 Ext. 288.

(9041)

RANSOMES

DATA PROCESSING MANAGER

Salary – P.O. 11-14 – £12,705 - £13,835

It is intended to set up a new computer installation to meet the data processing requirements of the District Council.

Applications are invited for the post of Data Processing Manager. The successful applicant will be responsible to a Director for establishing and managing the computer facility. He/she will have relevant practical experience, including a knowledge of computer technology and management techniques.

Local Government experience and a formal data processing *qualification would be an advantage.*

Assistance may be given with legal fees associated with house purchase, removal expenses and resettlement allowance. Where appropriate temporary housing accommodation will be made available. Renfrew District Council welcomes applications from suitably qualified Registered Disabled Persons.

Application forms, which should be returned not later than Wednesday, 14th April, 1982, are available from the Personnel Services Section, Municipal Buildings, Cotton Street, Paisley PA1 1BU. Telephone 041-889 5400 Extn. 434.

(9087)

Renfrew District Council

Department of Computing Services

Chief Systems Programmer

(£8,991 - £10,029)

To lead the systems team of four which is responsible for the systems software on the Central Computers (DEC 2060, XRK PDP11). Experience in networking would be advantageous but candidates with other expertise will also be considered.

Senior Applications Programmer

(£8,190 - £9,529)

To join the applications team of six which is involved in writing, installing, maintaining and advising on applications programs in a wide field of disciplines including Engineering, Business and Science on mainframe (DEC2060), MINI (PDP11) and Micro Computers. The major languages are Fortran and Basic and Major Packages include SPSS Fino-F, Perfeo, Genesys and Neg.

Programmer (Advisory) Information Officer

(£4,209 - £4,926)

To form part of the advisory team which is responsible for providing computing advice and information throughout the Polytechnic. The information officer will be the focal point for information within the department and will be responsible for user documentation. Departmental newsletter etc. Previous computer experience is not necessary but candidates must be willing to learn the relevant skills. A *reliable* and methodical person is sought with perhaps a technical writing, newsletter production or publicity background.

The Polytechnic offers: Modern computing equipment DEC2060 – with terminals on your desk.

The opportunity for qualified staff to work for a higher degree or qualification. Help with removal expenses.

The Nottingham area offers: Reasonable house prices – a three bedroom semi from £15,000 and good local amenities.

Further details of the posts along with more information on the Department of Computing Services and a form of application are available from the Assistant Director (Administration) Trent Polytechnic, Burton Street, Nottingham NG1 4BU. Forms should be returned by 16 April 1982.

(9084)

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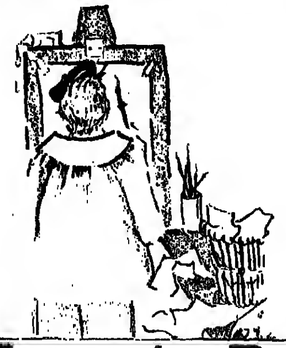
We sat up half the night trying to dream up a witty, eyecatching never been done before type ad – but everything HAD been done before. Should we emphasise the fact that it's a large international organisation with all the benefits? – Should we ask for insurance experience? – Should we tell you about the bright lights of London and the possible opportunities of world-wide travel? – or Should we be more concerned about IBM 4331 Dos/Vse and CICS? – We asked ourselves all this and more. We debated into the small hours. Eventually, EUREKA, we came up with this – as far as we know its never been done before:–



3 SENIOR ANALYSTS REQUIRED

Please phone Sue Ashby
Ann Betts
01 836 6775 days
0844 53531 eves

c £13,000

Computer Personnel International
THE SPECIALIST RECRUITMENT SERVICE DIVISION OF COMPUTER SYSTEMS INTERNATIONAL
A DIVISION OF COMPUTER SYSTEMS INTERNATIONAL
30-32 Southampton Street, London W.C.2 01-836 6775

Computing Services Association

JOIN OUR USA TEAM DEVELOPING FOURTH GENERATION SOFTWARE

TANGENT INTERNATIONAL COMPUTER CONSULTANTS (USA) along with TANGENT COMPUTER SERVICES (UK) are part of the Tangent Group of Companies now operating worldwide.

The range of services currently provided include the sale and support of software products and packages, education and training, business consultancy, turnkey project development and contract programming and analysis support.

Our spacious offices in the World Trade Center in New York, are the base for our FOCUS Division.

We would like to meet and talk to people with good knowledge of RAMIS, NOMAD or FOCUS, about the opportunities we can offer in the States.

For more information, please contact:
Phil Clark
USA Account Manager
on
Romford (0708) 750201

TANGENT COMPUTER SERVICES
102/106 South Street
Romford
Essex RM1 1RX

Tangent

(9091)

THE Comac CONTRACT

UK CONTRACTS £350 to £450

Systems People, Analyst Programmers, Programmers for contracts 3 months to 18 months

IBM CONTRACTS
IBM MVS PROGRAMMERS
IBM MVS COBOL/PLI PROGRAMMERS
IBM VM/VMS COBOL PROGRAMMERS
IBM MVS CICS COBOL PROGRAMMERS
IBM CICS DLI COBOL PROGRAMMERS
IBM SYSTEM 38 RPG/CL PROGRAMMERS
IBM ADF MVS PROGRAMMERS
IBM DOS/VSE COBOL PROGRAMMERS

TANDEM CONTRACTS
TANDEM T16 COBOL
SCOBOL PROGRAMMERS

ICL CONTRACTS
ICL 2900 VME/B IQMS PROGRAMMER ANALYSTS

HEWLETT PACKARD CONTRACTS
HP 3000 PROGRAMMERS HP 1000 FORTRAN PROGRAMMERS

DEC CONTRACTS
VAX VMS SYSTEMS PROGRAMMERS. VAX 11/780 COBOL PROGRAMMERS

USA CALIFORNIA to $35,000

IBM DLI/CICS COBOL PROGRAMMERS
IBM DOS/VSE VM CMS COBOL PROGRAMMERS

SAUDI ARABIA CONTRACTS £550 to £750

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IBM PL/I MVS DB/DC TSO/SPF JCL ANALYST PROGRAMMERS & PROGRAMMERS
IBM MVS/JES2 TP SYSTEMS PROGRAMMERS — BUSINESS ANALYSTS
IBM OS/MVS BTS ADF IMP ON LINE DATA BASE DESIGN ANALYSTS
NMIV PROGRAMMER ANALYSTS

We have a reputation for moving quickly and efficiently so for an informal chat telephone us today or send your c.v. as soon as possible.

Comac Comms

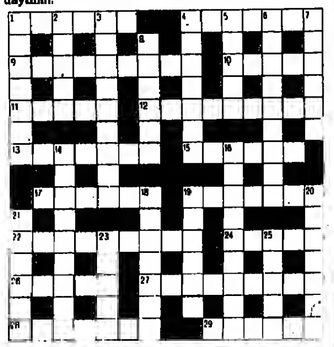
COMPUTER APPOINTMENTS & CONTRACTS
27 TOWN CENTRE, HATFIELD, HERTS.
Telephone Hatfield (07072) 65699 or 69889
24 HOUR ANSWER SERVICE

CROSSWORD

Prize Crossword No 27

Compiled by Alec Robins

A prize of £10 will be awarded for the first correct entry opened. The second and third solutions opened will receive £5 each. Entries to Crossword Competition, Computer Weekly, Quadrant House, The Quadrant, Sutton, Surrey, SM2 5AS, by first post Friday, April 9. Please use a ballpoint to complete the crossword, and include a telephone number at which you can be reached during the daytime.



Name ..... (Miss, Mrs, Ms, Mr)

Address .....

.....

Telephone .....

I accept the rules and conditions of the Computer Weekly Crossword Competition.

Signed ..... Date .....

ACROSS

1. Overthrow half each, getting clever about it (6)
4. Holy representation one with no mother brought back (7)
9, 10. Drink on in the midst of drama and angry talk, making puns? (5,4,5)
11. Enjoys things of the same kind (5)
12. Waving gun in front of everyone, the worker is discourteous (9)
13. A lot of detectives, backed by the gallery, lay down the law (7)
15. Get back, for example, in bad weather (6)
17. Paid employment with a Liberal, connected with the mail (6)
19. Strains caused by love-potions, from what we hear (7)
22, 24. Electrical wiring material — it can all be used, though twisted (9,5)
26. Heating unit has limited period around hospital (5)
27. Getting an around the bishop's office, being prudent (3-6)
28. Seeds back arms — end to conflict (7)
29. Act as witness at a trial (6)

DOWN

1. Theologian eats fruit marked with spots (7)
2. Side that's noisy, tall and lean (5)
3, 4. Man with responsible post is a fool — isn't a great man, unfortunately (9,7)
5. Fastening pin makes you prosper, almost (5)
6. To get working regularly, Ronald raised a smile somehow (9)
7. Like a group's property (6)
8. Trim the conifer (6)
14. Part of building's structure makes one vexed, then smile radiantly (9)
16. Bird having precious stuff about on holiday (9)
18. The French nob's escapes (3-4)
19. Given sustenance, or a felt hat (6)
20. Toboggan needs toughness, initially, and dexterity (7)
21, 23. Acrimonious with disappointment? Here's a refreshing drink (6,5)
25. Sea and rail network in the East (5)

RULES AND CONDITIONS

1. Each competitor may submit no more than one entry.
2. The competition is open to all readers of Computer Weekly with the exception of the staff of IPC Business Press Ltd, any printers employed by them or the near relatives of any such staff.
3. The solution of each puzzle will normally be published in the issue three weeks after the puzzle has been published.
4. Winners will receive their prizes during the month following the competition.
5. The decision of the editor on the interpretation of the rules and conditions and on all matters shall be final. No correspondence will be entered into.

SALES BIT

Quality of Management–3

The essentials of successful advertising

HOPEFULLY, some readers will have gained a little amusement from the two most recent instalments of The Sales Bit which were primarily devoted to the Peter Principle and a collection of related anecdotes that basically suggest we all have our limitations but usually recognise what they are only when we have exceeded them.

Last week, I was having a chat with Malcolm Peltu, a former editor of Computer Weekly, about advertising and its relevance to the computer industry at large and especially for companies that find themselves with a corporate or product credibility problem. This led me to thinking about the role of the sales manager in advertising, not so much from the creative standpoint, but more in terms of the disciplines and considerations that are essential in order to have reasonable return for investment.

Salespeople usually complain that their company does not make sufficient or even any investment in advertising, thus creating two particular problems.

First, a lack of corporate and product credibility, especially related to new products and certainly when competitors are involved with opposing campaigns.

Second, the absence of product exposure to the large numbers of potential buyers who are inevitably missed by the direct sales dragnet and consequently never have their interest stimulated.

On the other hand management tends to take the more pragmatic viewpoint of identifiable gain for investment, and when directed towards product advertising within the computer industry, often reaches a negative conclusion. The perennial question, bearing in mind the considerable cost of national Press advertising in particular, is whether for a given investment a better return might be achieved from say, Press relations or the recruitment of one or more additional sales personnel.

Unfortunately it is difficult to quantify positively the effect of advertising related to the creation of corporate image and product credibility. Even more tangible advertising processes, which are geared to generating enquiries for specific products, cannot be absolutely quantified merely by the number of responses received.

Clearly advertising has many important roles to play within the sales and marketing process, the most important of which are the generation of sales enquiries and the establishment of credibility in order to give the people at the "sharp end" a reasonable chance of success. In direct comparison with direct sales effort, advertising is most effective in the penetration of the very large companies and institutions.

If any sales manager was to compare the number of different persons regularly contacted by a given salesman within each of his accounts with the number of persons employed by each company, the result is almost certain to be a declining ratio the larger the number of employees.

In other words, it is extremely difficult for salespeople to penetrate the labyrinthine morass of large organisations within a short timescale or, in many circumstances, ever. Advertising can often make some contribution to flushing out valid prospects from a faceless crowd.

It is unreasonable to expect every sales and/or marketing manager to be an aesthetic genius and master wordsmith, in addition to all the other skills that are needed for survival. However, there is a basic qualification that all advertising must satisfy if it is to succeed, and it is up to the manager to ensure that the essential questions are answered unequivocably:

Does it demand attention, does it arouse interest, does it create a desire and, if it is designed to generate enquiries, does it stimulate action?

If this does not achieve a positive yes in each case somebody has got it wrong.

I have always found advertising which relates to existing clients within specific applications to be the most effective. This approach has much more credibility than simply shooting the odds about a specific product.

The choice of media is often difficult, but with specific trade journals it is relatively easy to compare the likely performance of one against another by securing an analysis of readership within total distribution and dividing the cost of a specific advertisement by the number of relevant readers, arriving at a cost per possible valid contact.

Looking back to my own selling days with major corporations, one of the things that really got up my nose was to discover, by accident and without warning, an advertisement placed by my own company related to the product I was actually selling, or even worse had my attention drawn to it by a customer.

If advertising is intended to generate increased sales then salespeople must be given every assistance to exploit it. This usually involves no more than giving them advanced warning by way of photocopies before the event or even prints to hand out to clients.

Like many aspects of sales management there is a constant need to view each situation through the eyes of the people out in the field as well as one's own.

Alan Williams

PUZZLE ANSWER